

FIG. 1

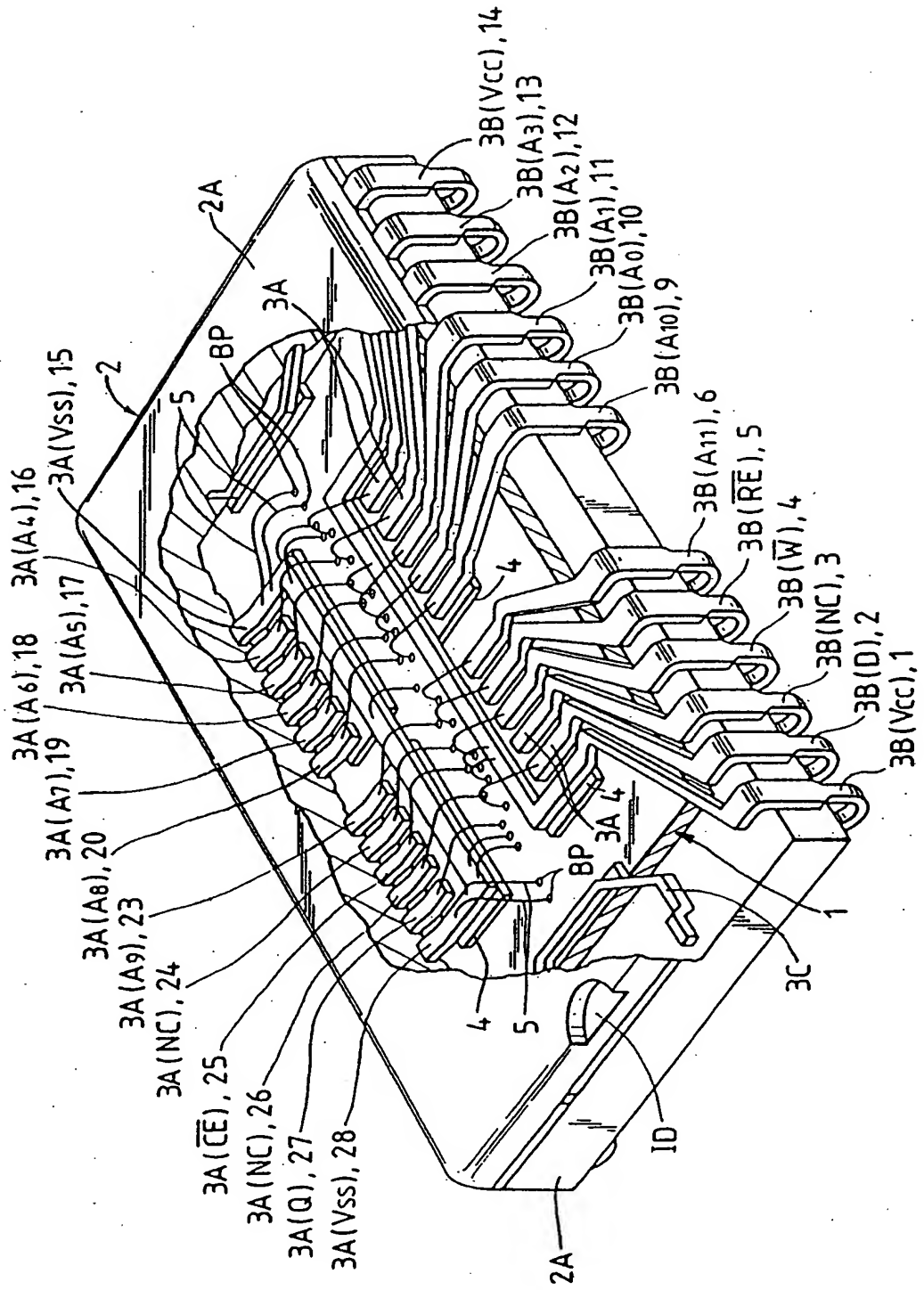


FIG. 2

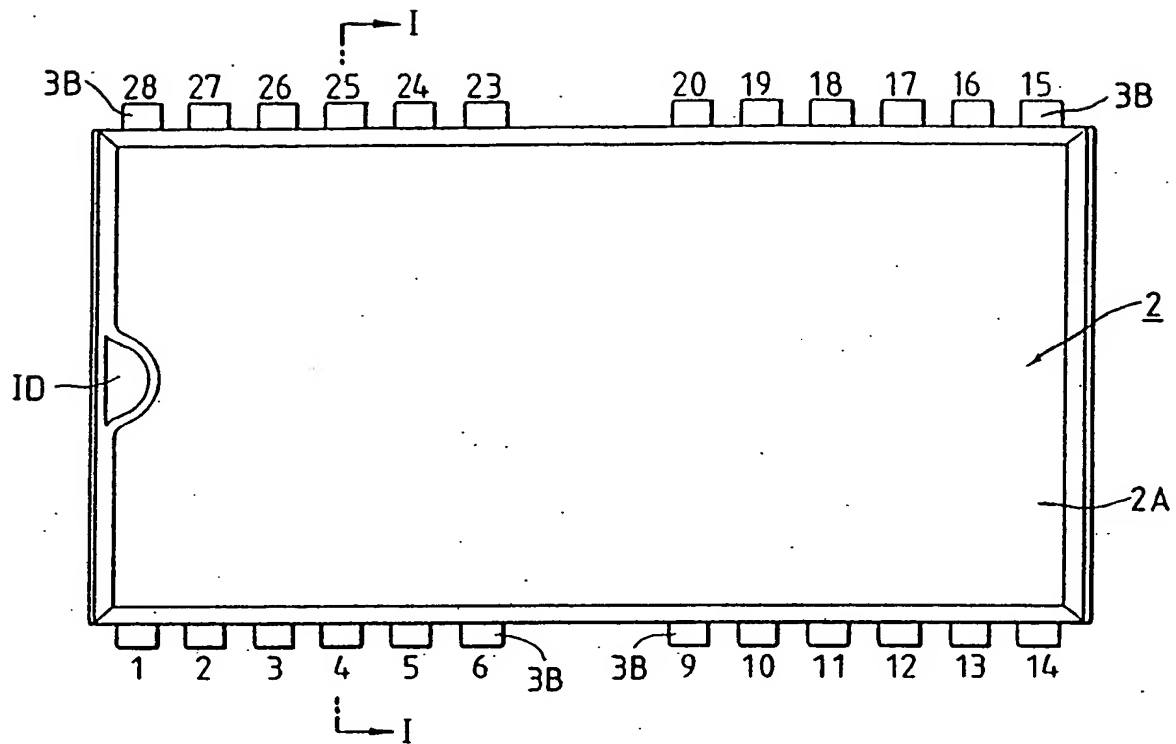


FIG. 3

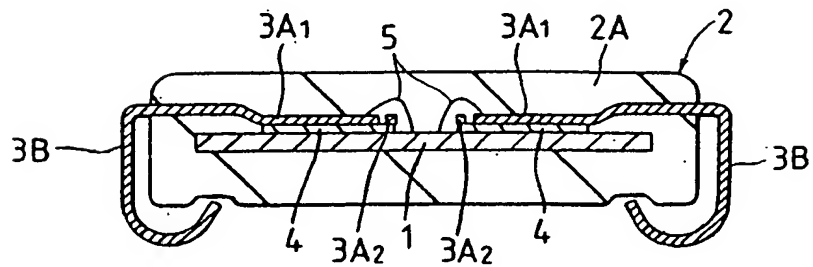


FIG. 4

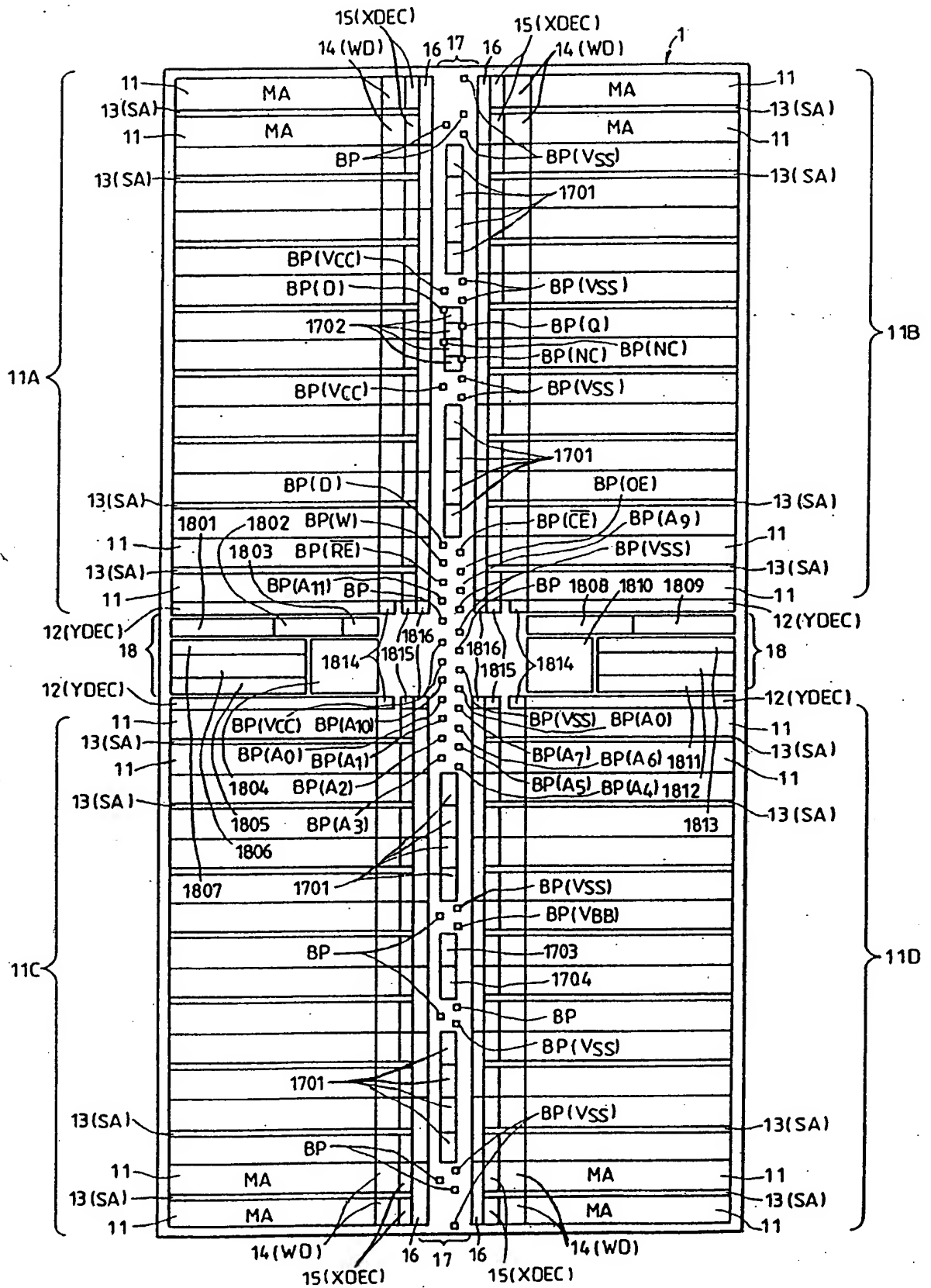


FIG. 5

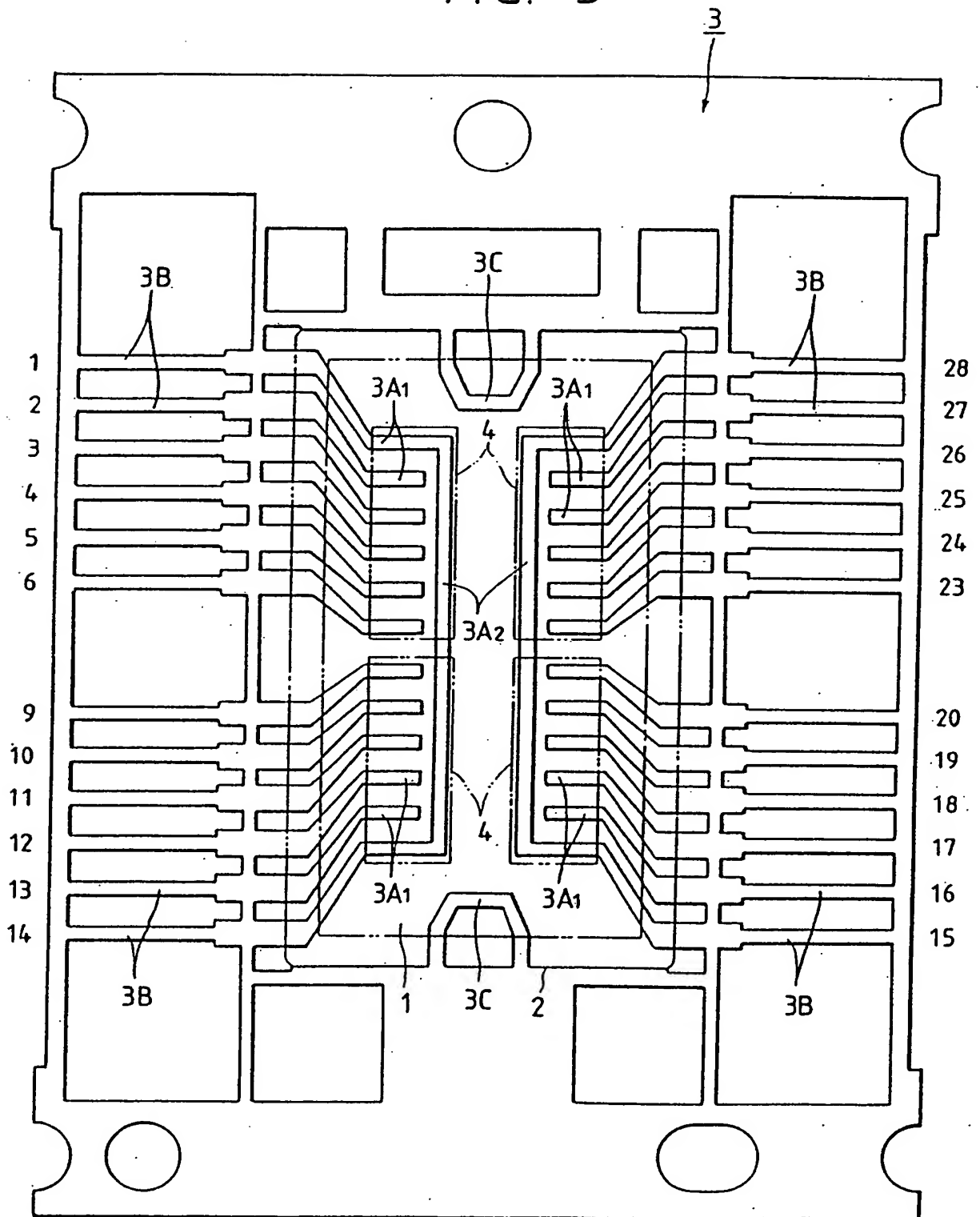


FIG. 11

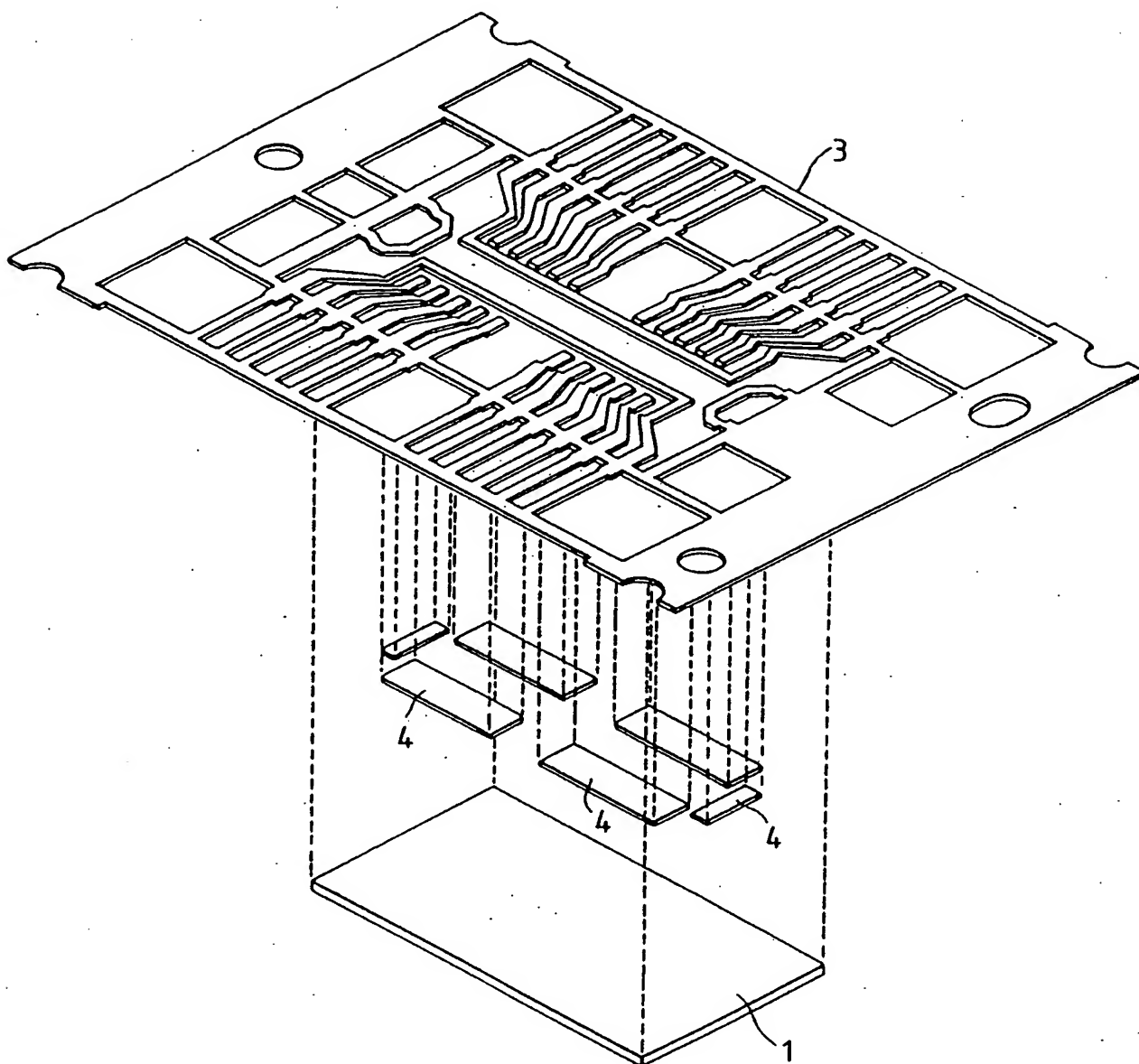


FIG. 12

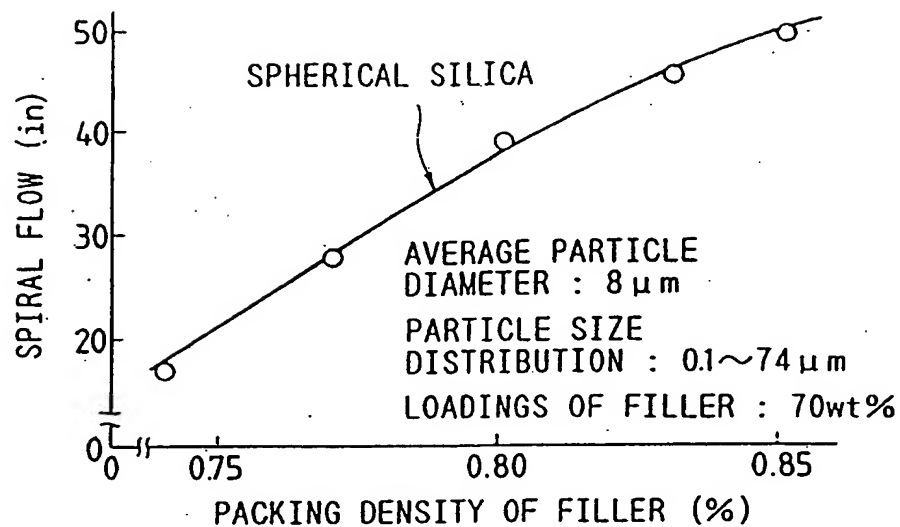


FIG. 13

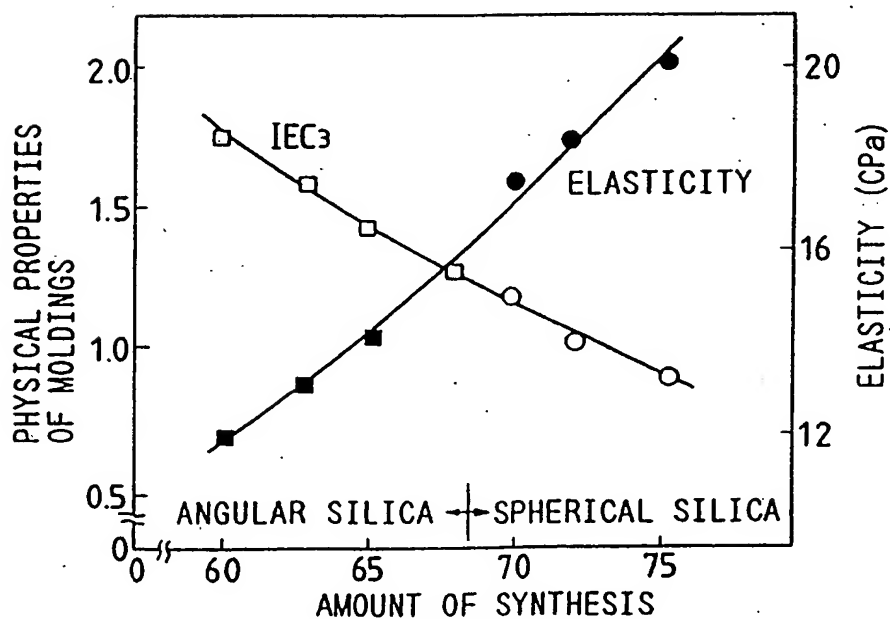


FIG. 14

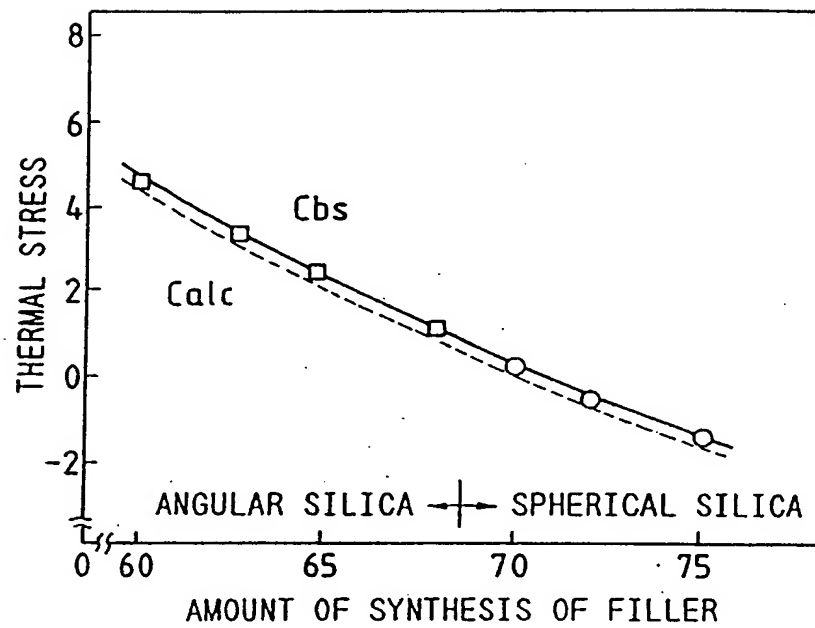
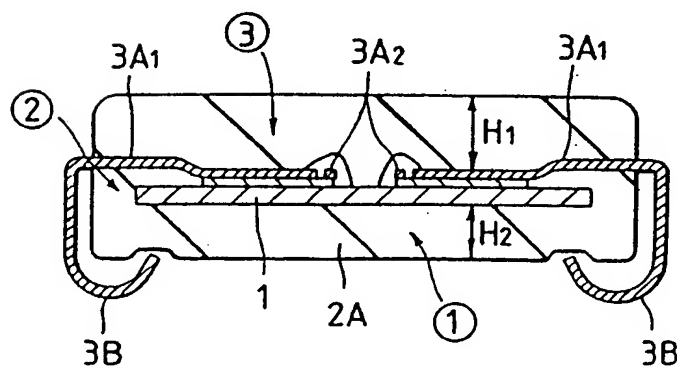


FIG. 15



The diagram illustrates a cross-section of a chip carrier assembly. A central chip is mounted on a substrate. The chip has a thickness t_f and a width W_f . The carrier has a total width W_c and a total height h_c . The chip is positioned within a lead frame. The lead frame has a thickness t_c and a height h_1 . The chip is mounted on a substrate of thickness h_2 . The chip is connected to the substrate by a solder joint of thickness h_{32} . The lead frame is connected to the substrate by a solder joint of thickness h_{31} . The diagram shows three flow paths: Flow Path ① (bottom), Flow Path ② (middle), and Flow Path ③ (top). Flow Path ① and ② are indicated by arrows pointing to the bottom and middle sections, respectively. Flow Path ③ is indicated by an arrow pointing to the top section. The diagram also shows the chip and the lead frame. The chip is labeled 'CHIP' and the lead frame is labeled 'LEAD FRAME'. The dimensions are labeled as follows: W_c (total width), W_f (chip width), h_c (total height), t_f (chip thickness), t_c (lead frame thickness), h_1 (lead frame height), h_2 (substrate height), h_{31} (top solder joint thickness), h_{32} (bottom solder joint thickness), l (chip length), and l (lead frame length). The diagram also shows the chip and the lead frame. The chip is labeled 'CHIP' and the lead frame is labeled 'LEAD FRAME'. The dimensions are labeled as follows: W_c (total width), W_f (chip width), h_c (total height), t_f (chip thickness), t_c (lead frame thickness), h_1 (lead frame height), h_2 (substrate height), h_{31} (top solder joint thickness), h_{32} (bottom solder joint thickness), l (chip length), and l (lead frame length).

RESIN FLOW DIRECTION

GATE

LEAD FRAME

CHIP

FLOW PATH ①

FLOW PATH ②

FLOW PATH ③

a b

Diagram illustrating a microfluidic device structure. A central horizontal bar is labeled "CHIP". Above the chip is a channel labeled "FLOW PATH ①". Below the chip is a channel labeled "FLOW PATH ②". The entire structure is enclosed in a rectangular frame.

FIG. 19

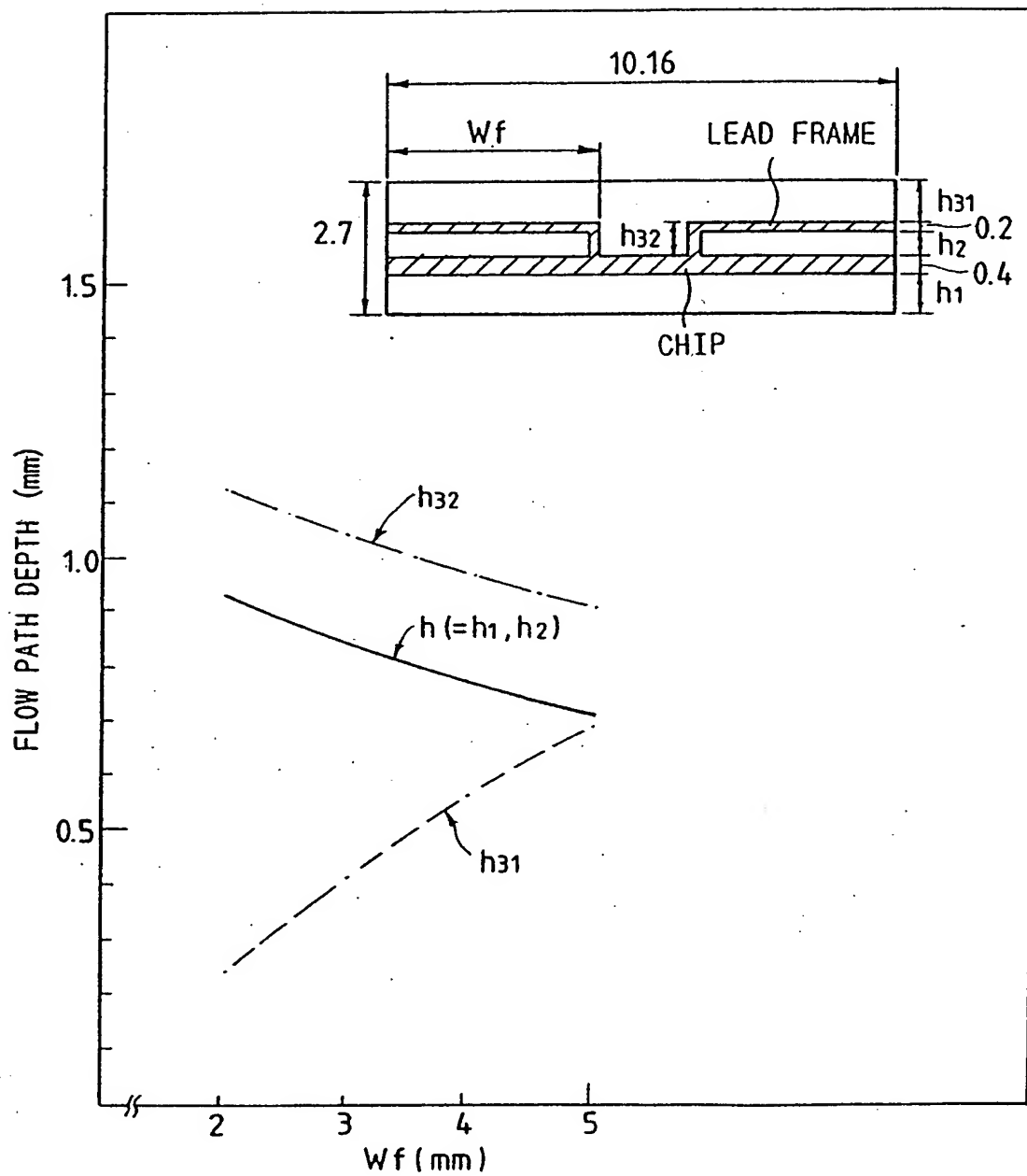


FIG. 20

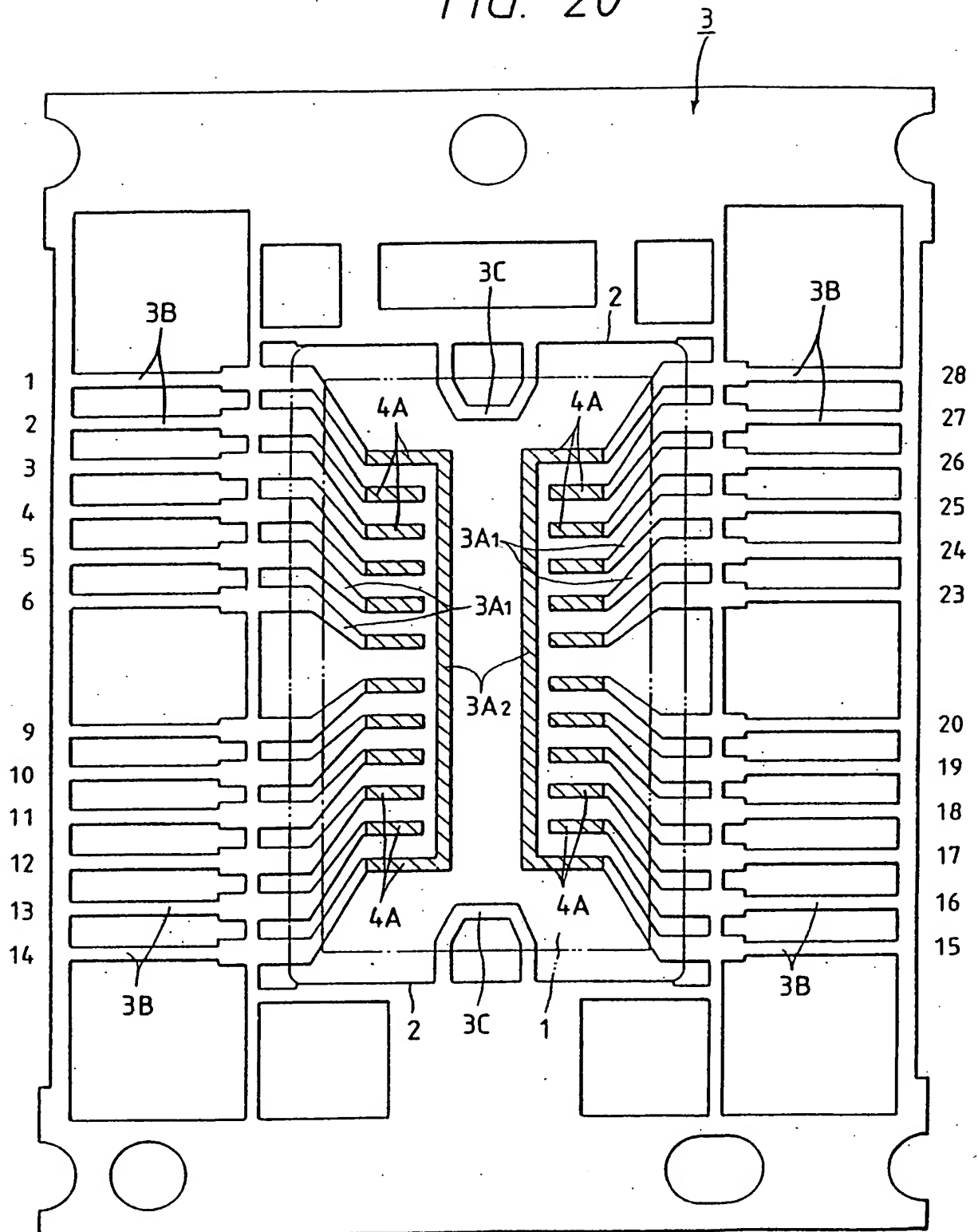
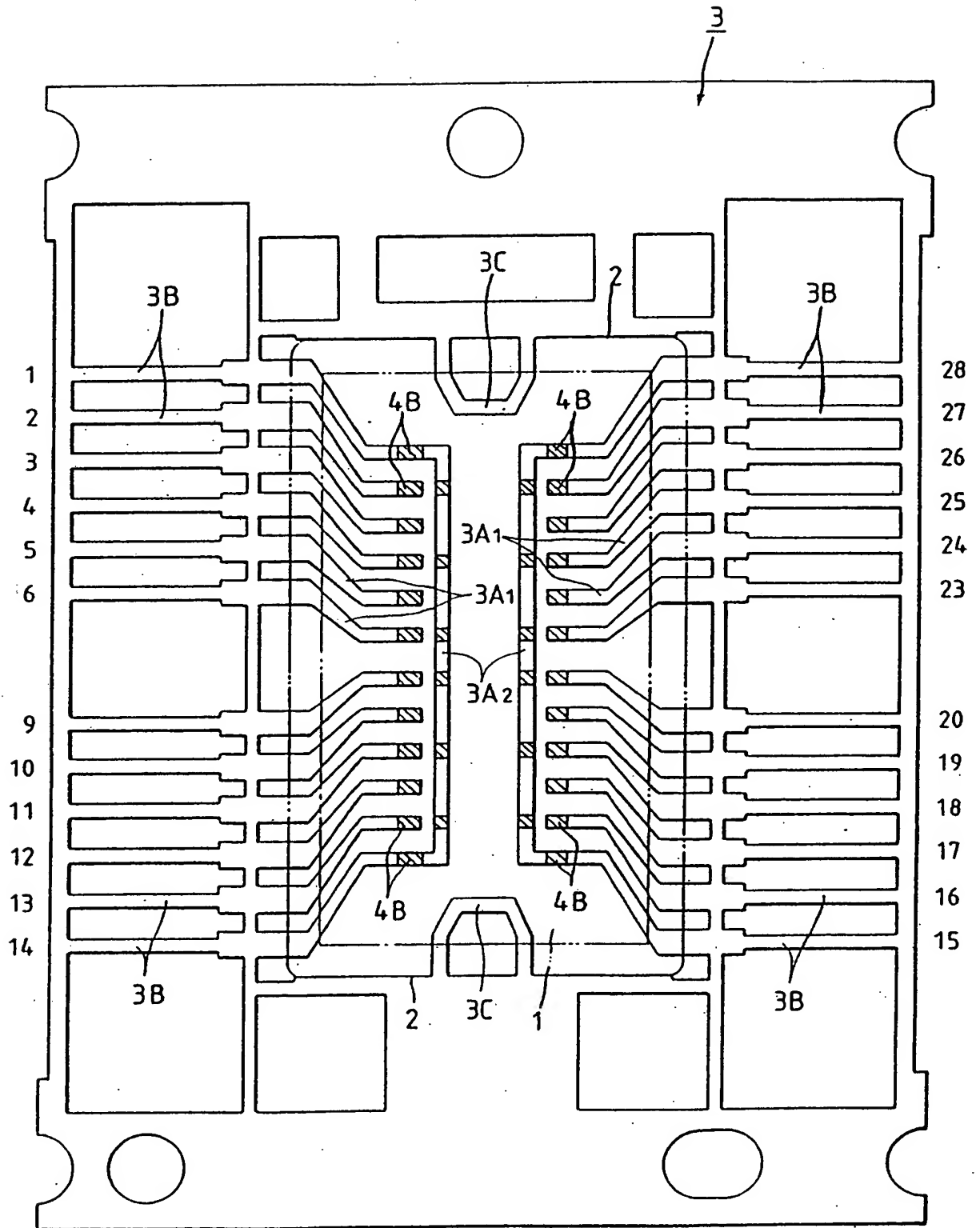


FIG. 21A



11



FIG. 21B

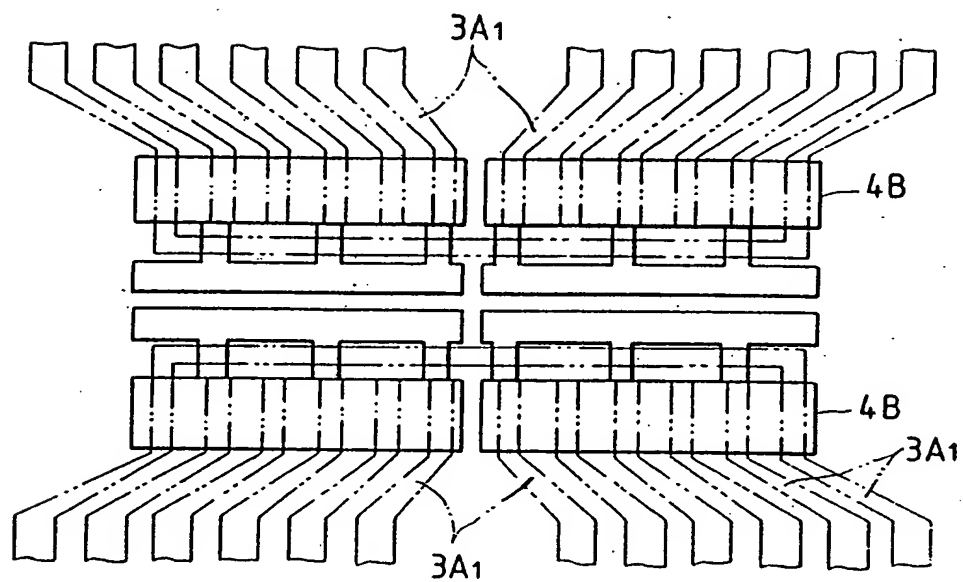


FIG. 22B

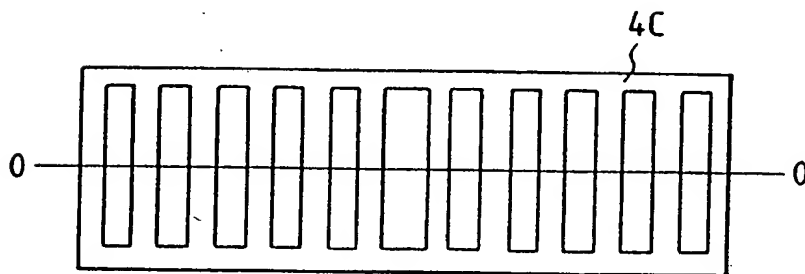


FIG. 23

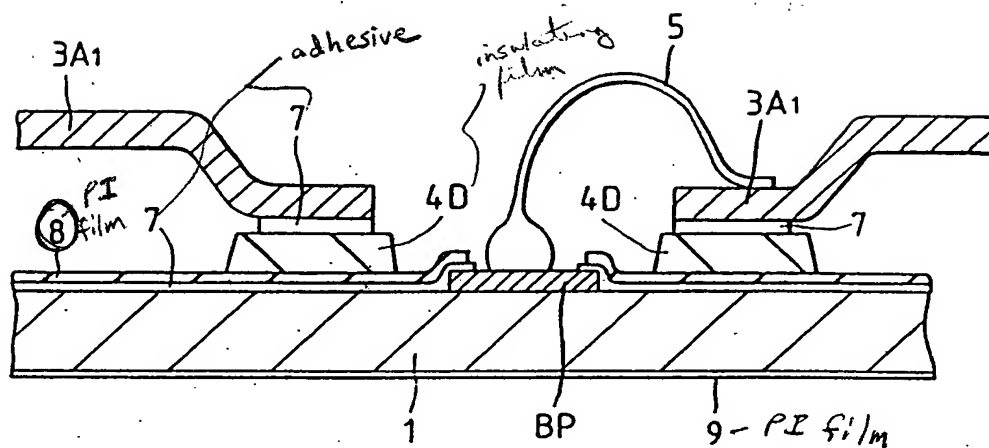


FIG. 25

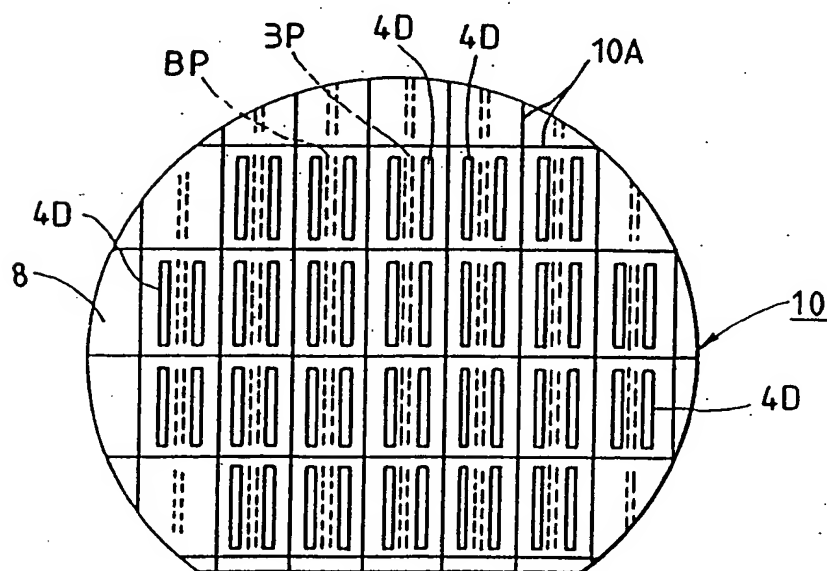


FIG. 24A

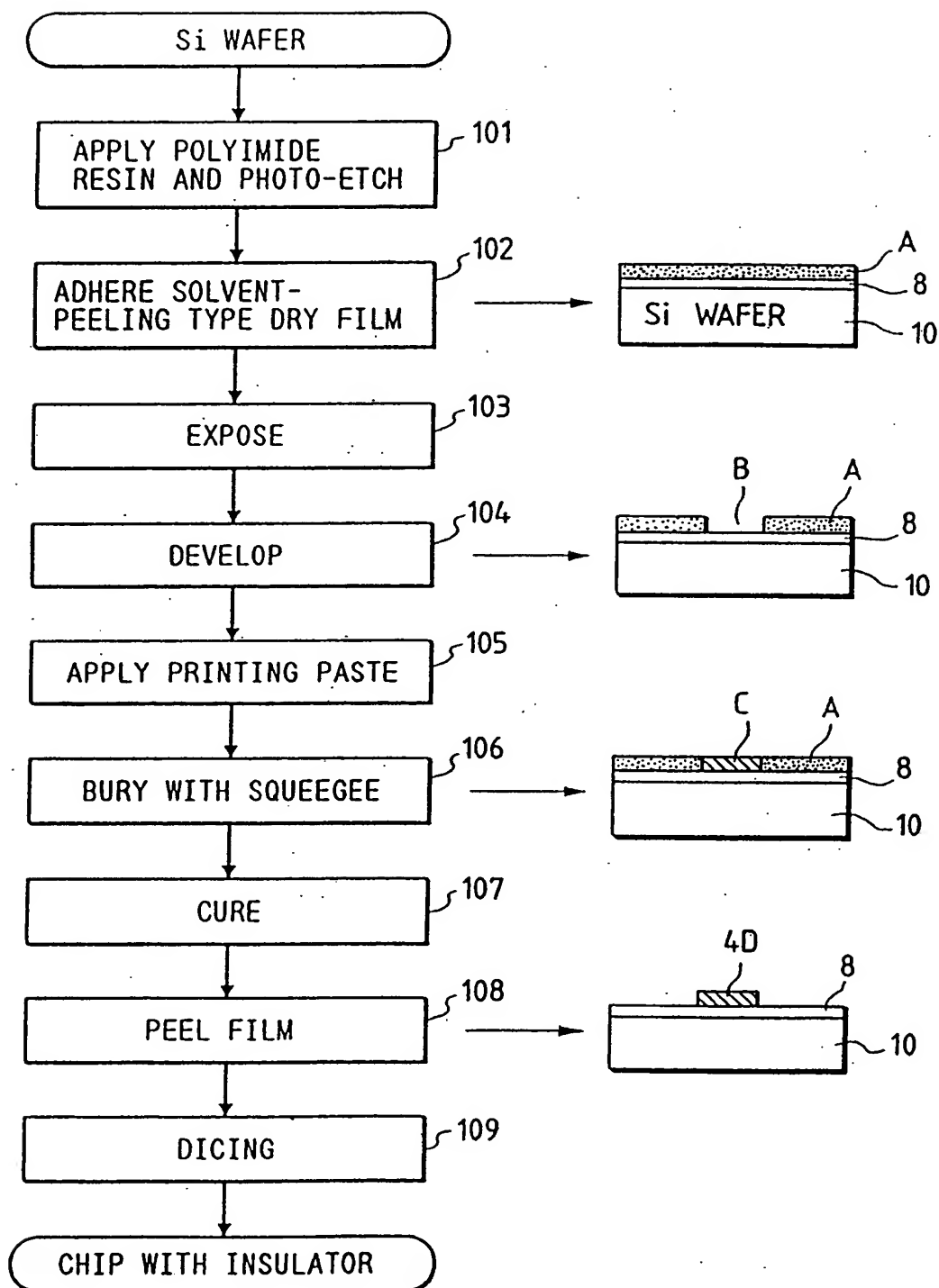


FIG. 24B

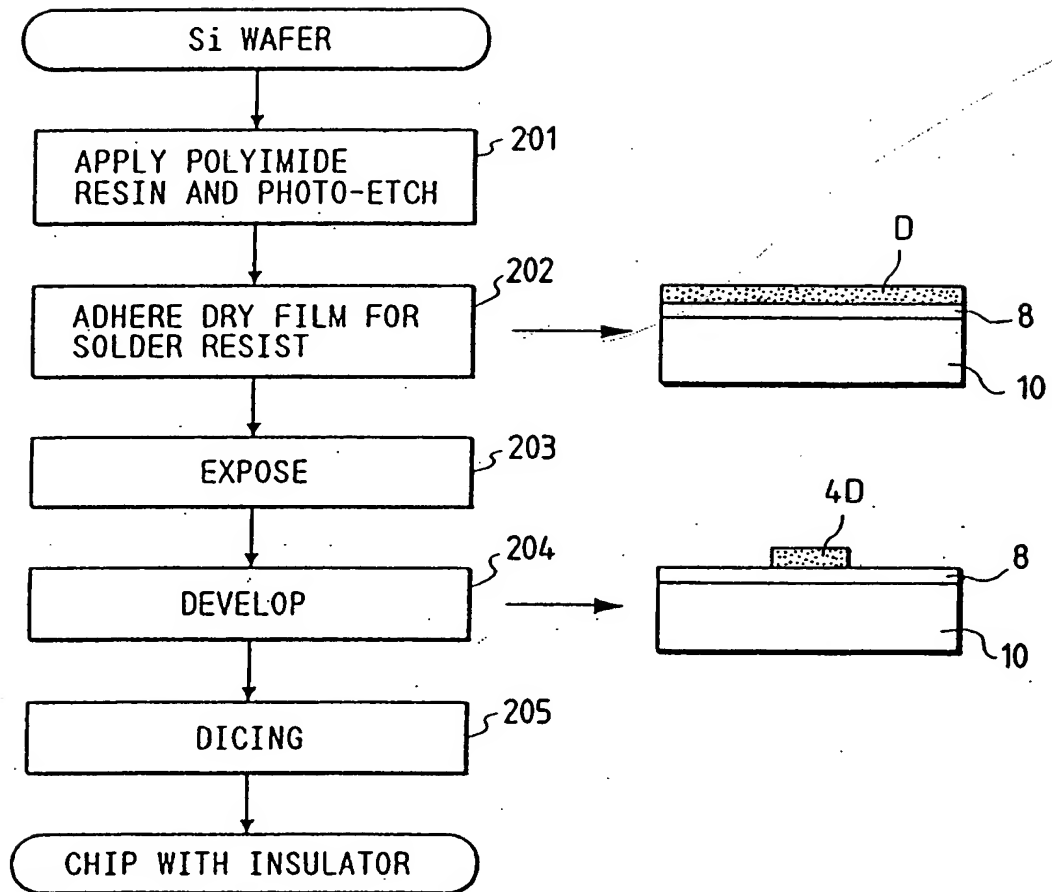


FIG. 26

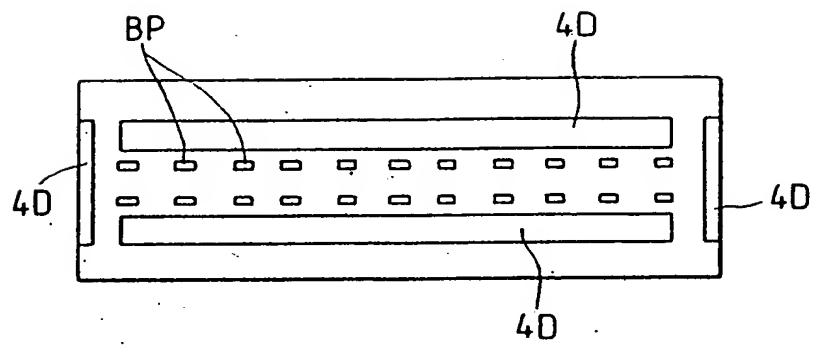


FIG. 27

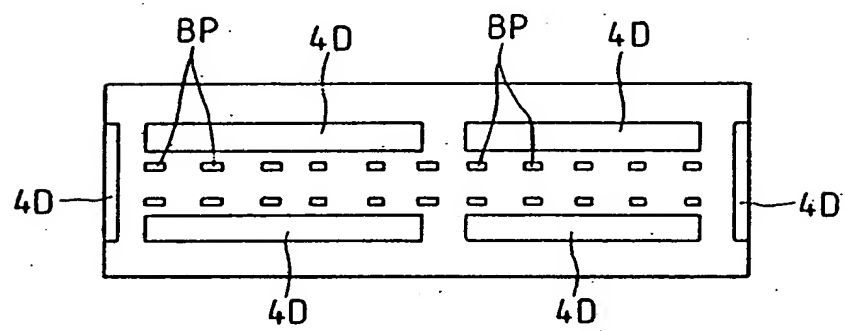


FIG. 28

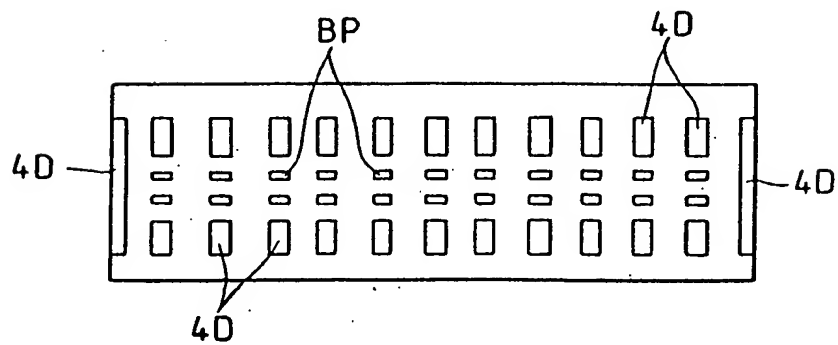


FIG. 29

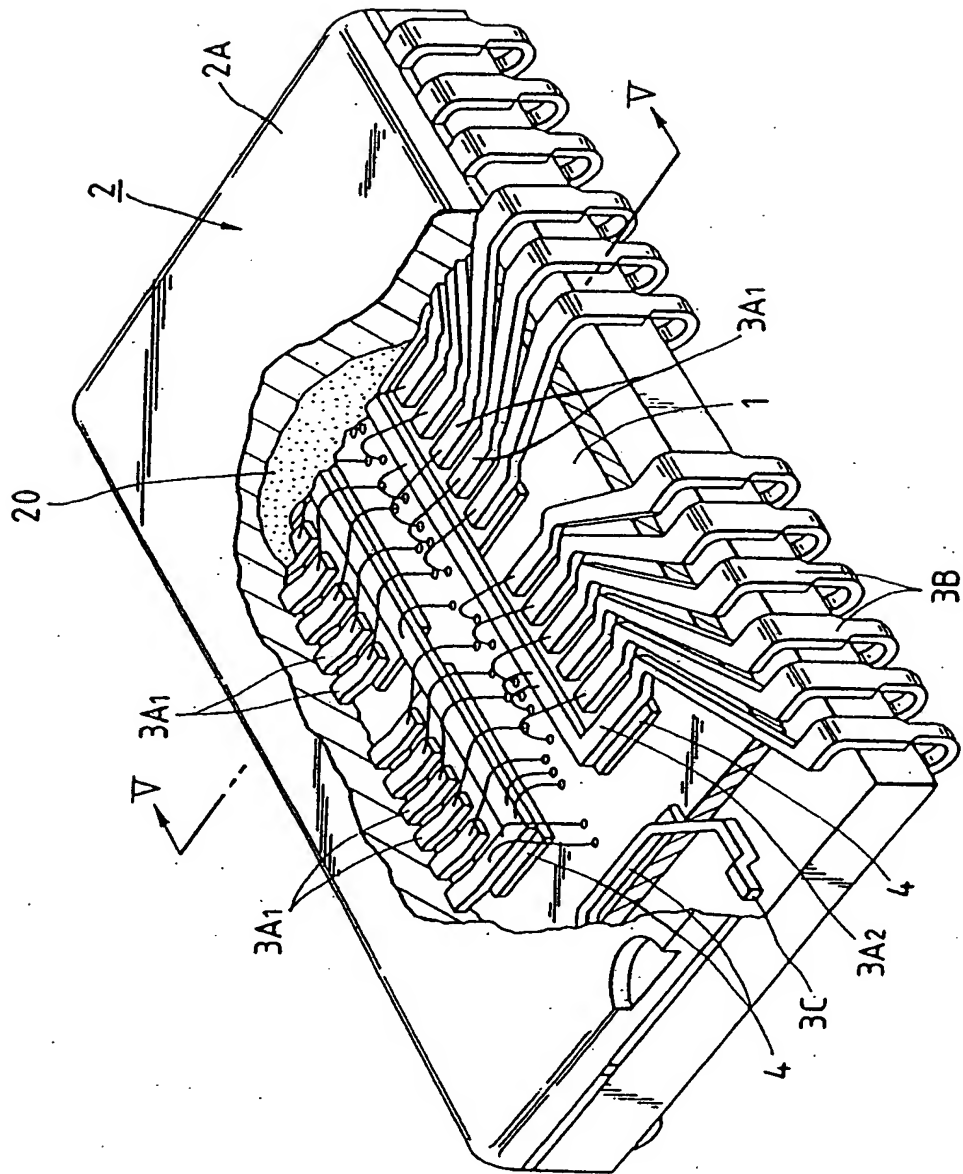


FIG. 30

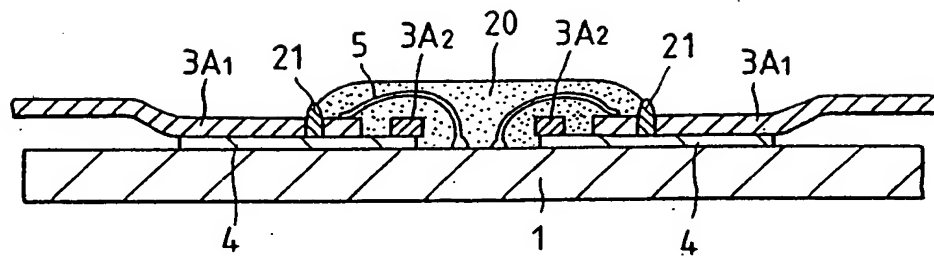


FIG. 31

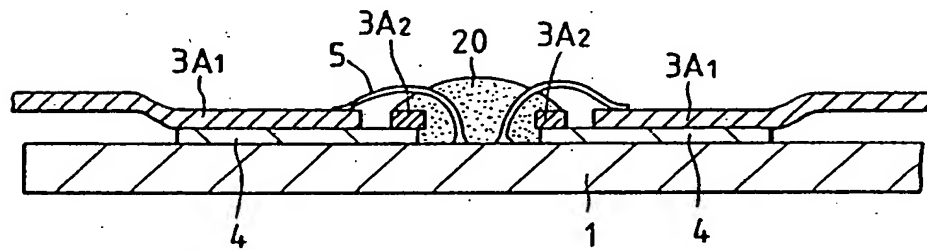
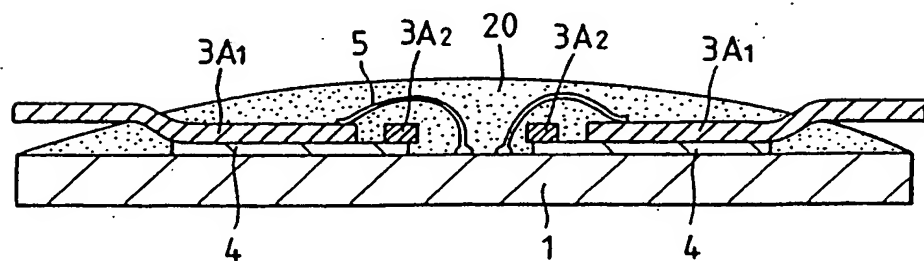


FIG. 32



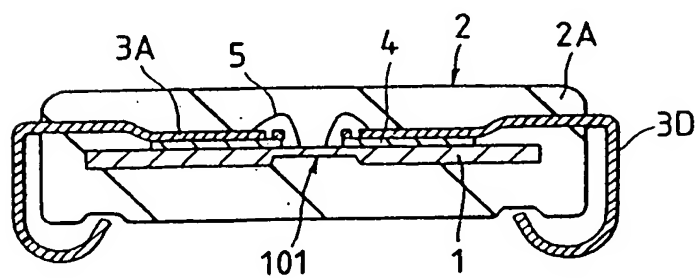
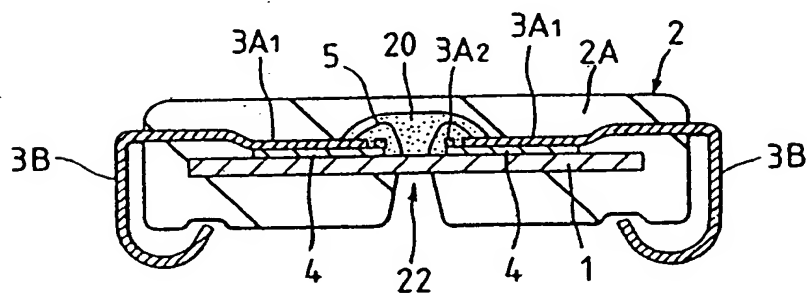
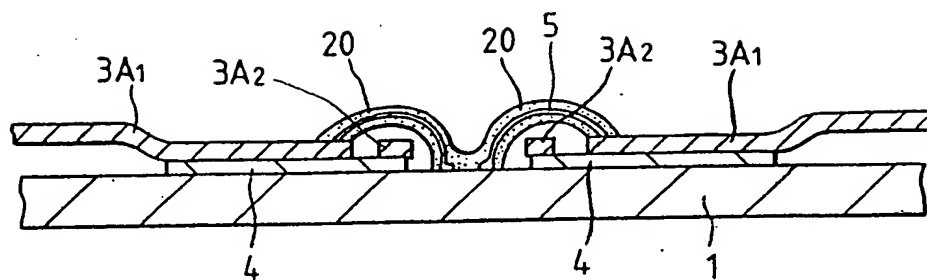


FIG. 36A

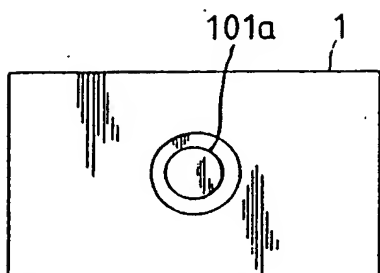


FIG. 36B

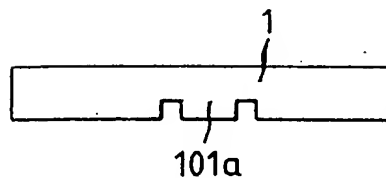


FIG. 37A

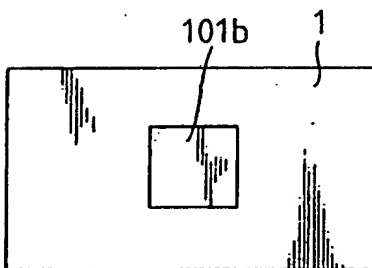


FIG. 37B

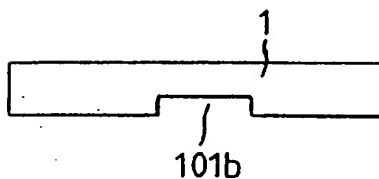


FIG. 38A

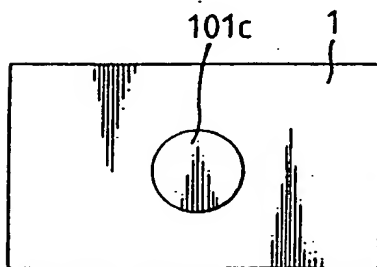


FIG. 38B

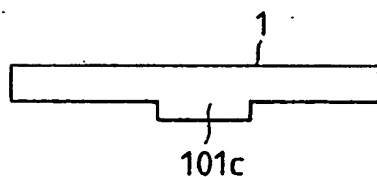


FIG. 39A

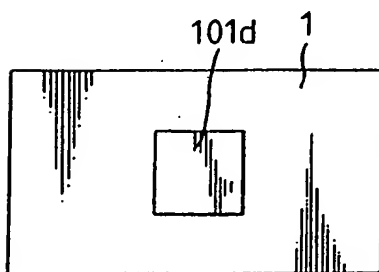


FIG. 39B

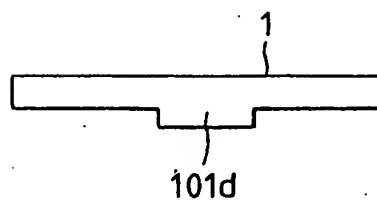


FIG. 40A

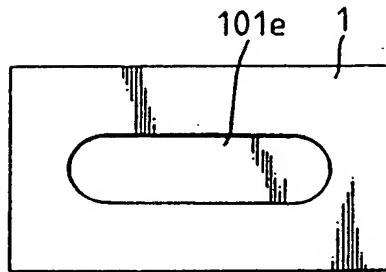


FIG. 40B

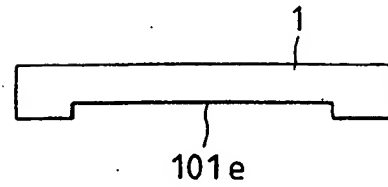


FIG. 41A

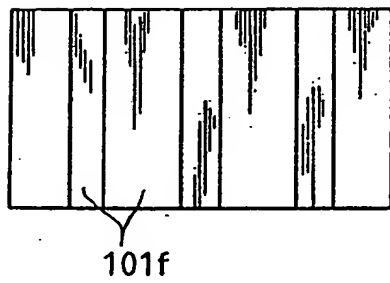


FIG. 41B

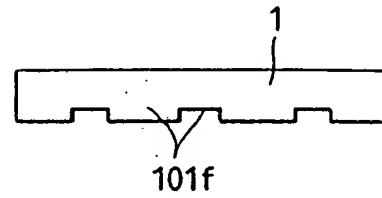


FIG. 42

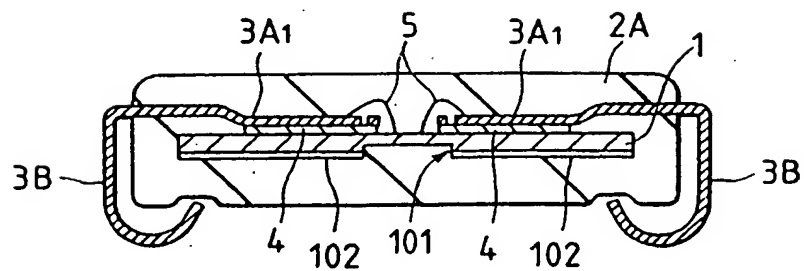


FIG. 43

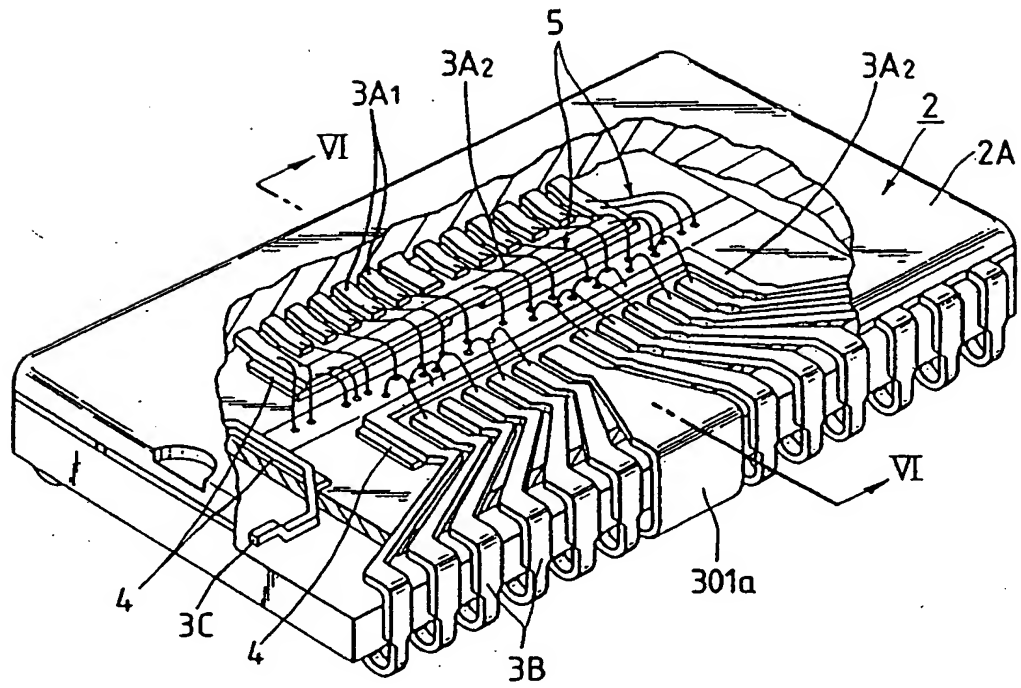


FIG. 44

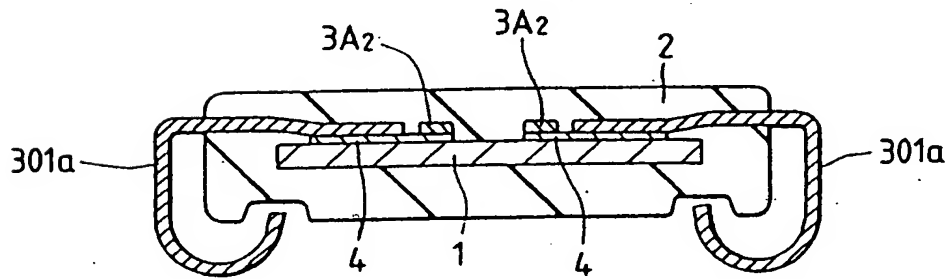


FIG. 45

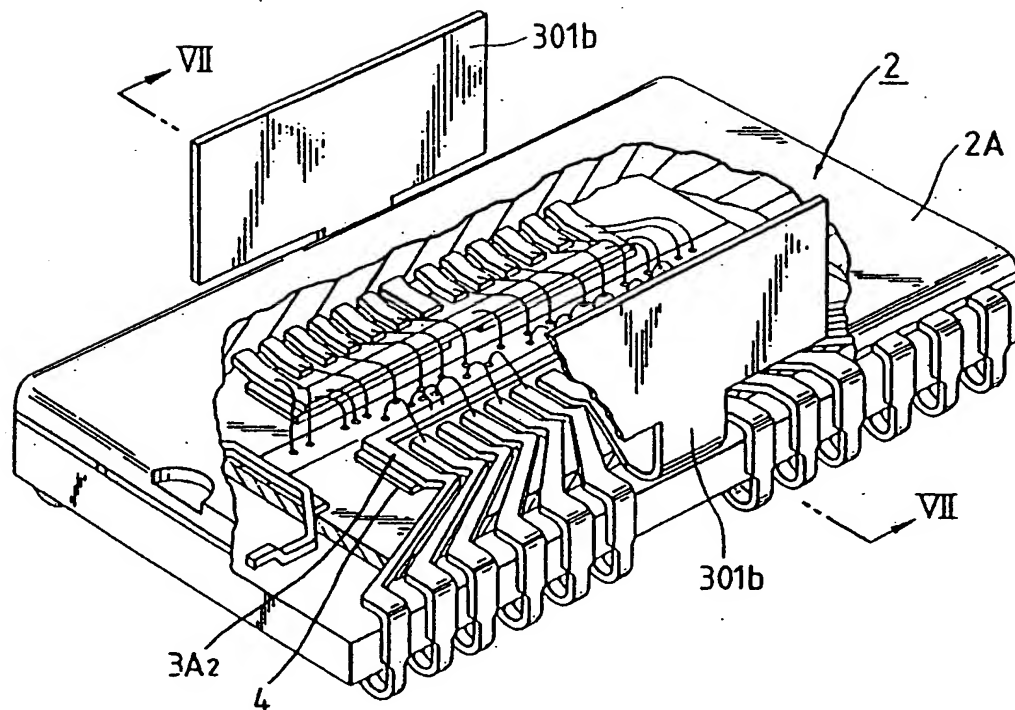


FIG. 46

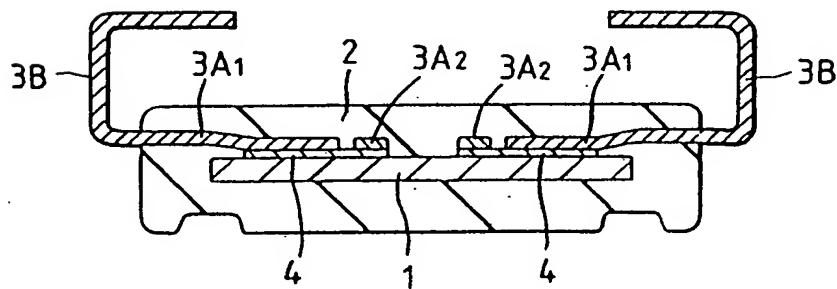


FIG. 47

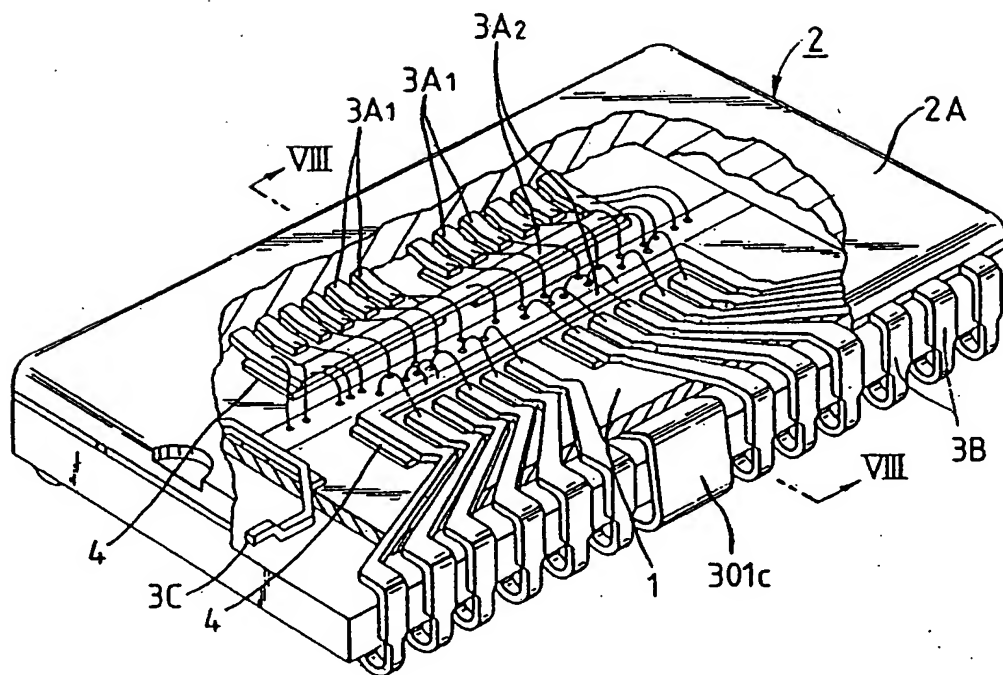


FIG. 48

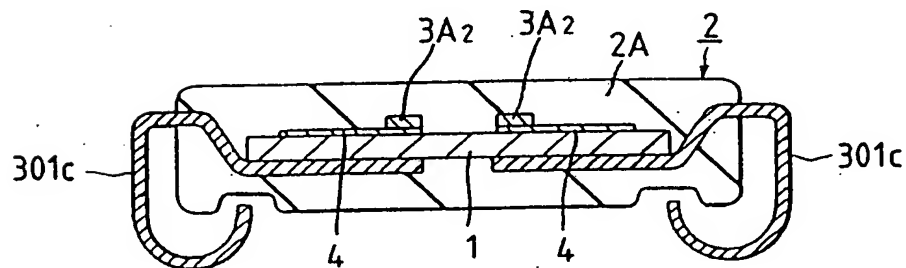


FIG. 49

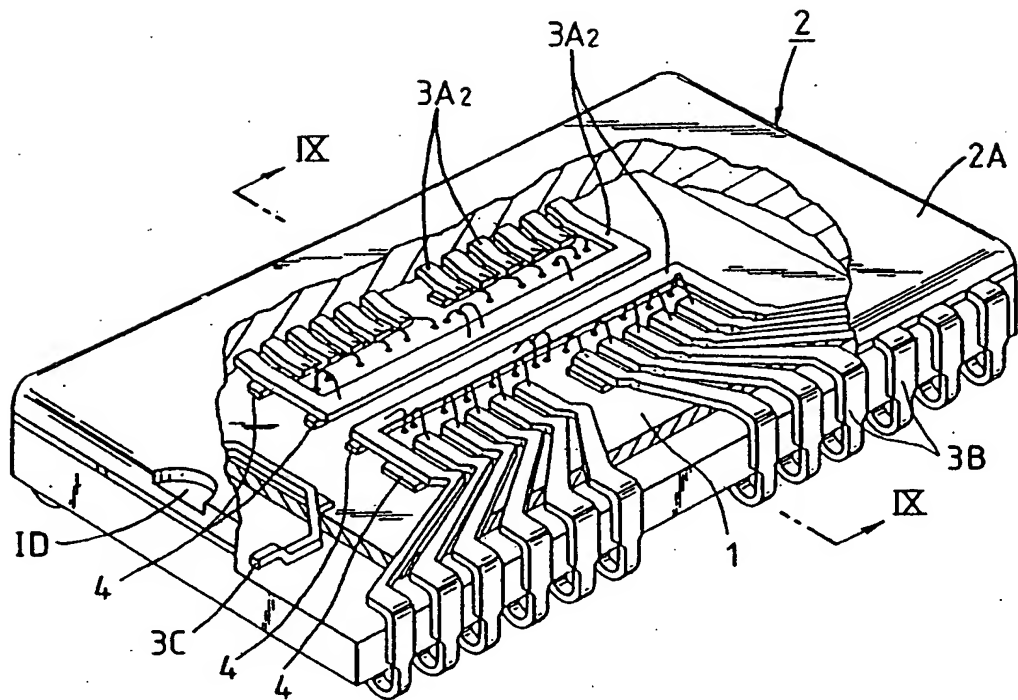


FIG. 50

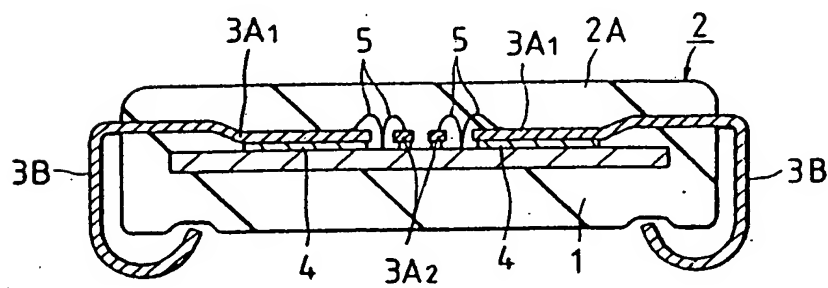


FIG. 51

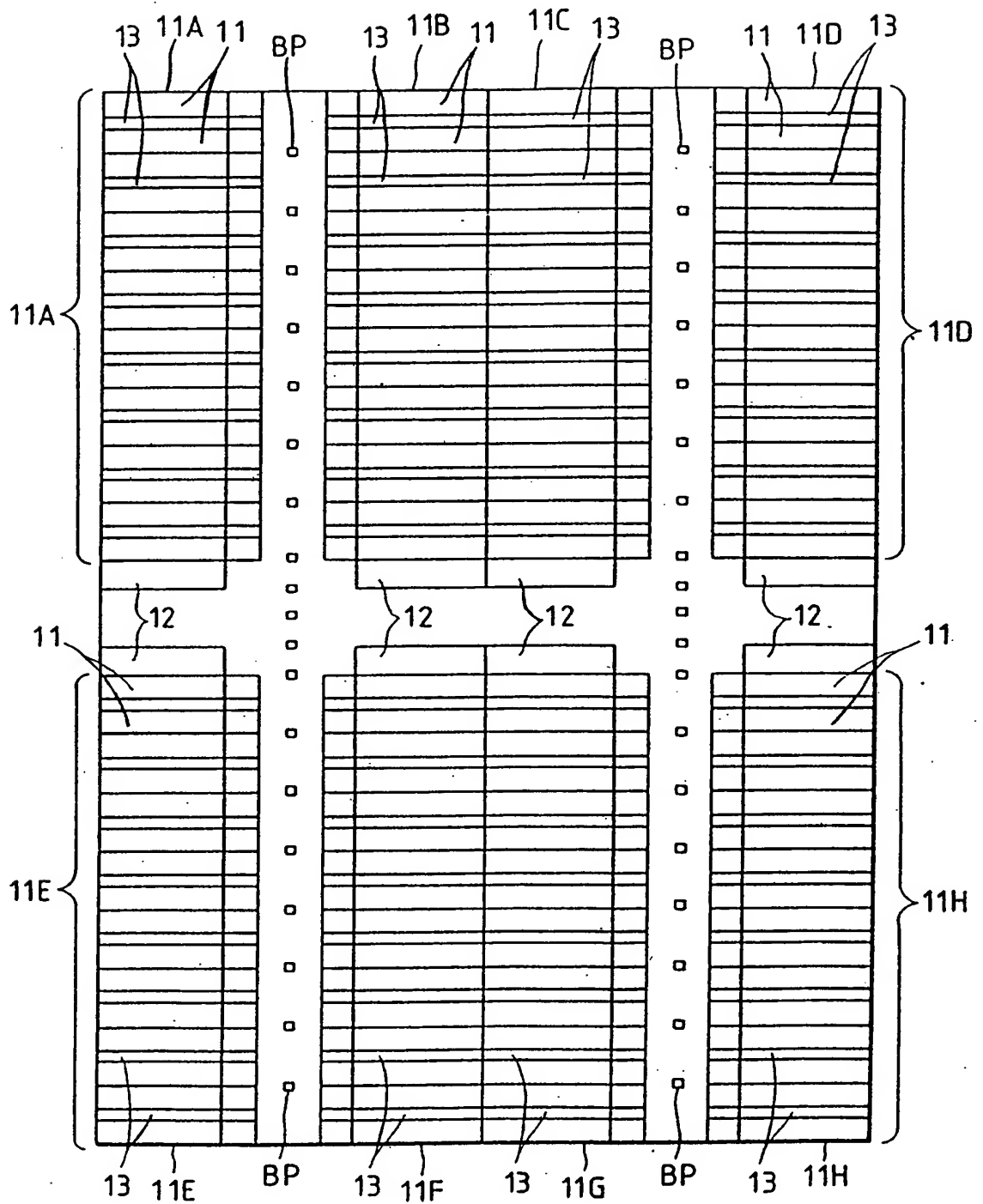


FIG. 52

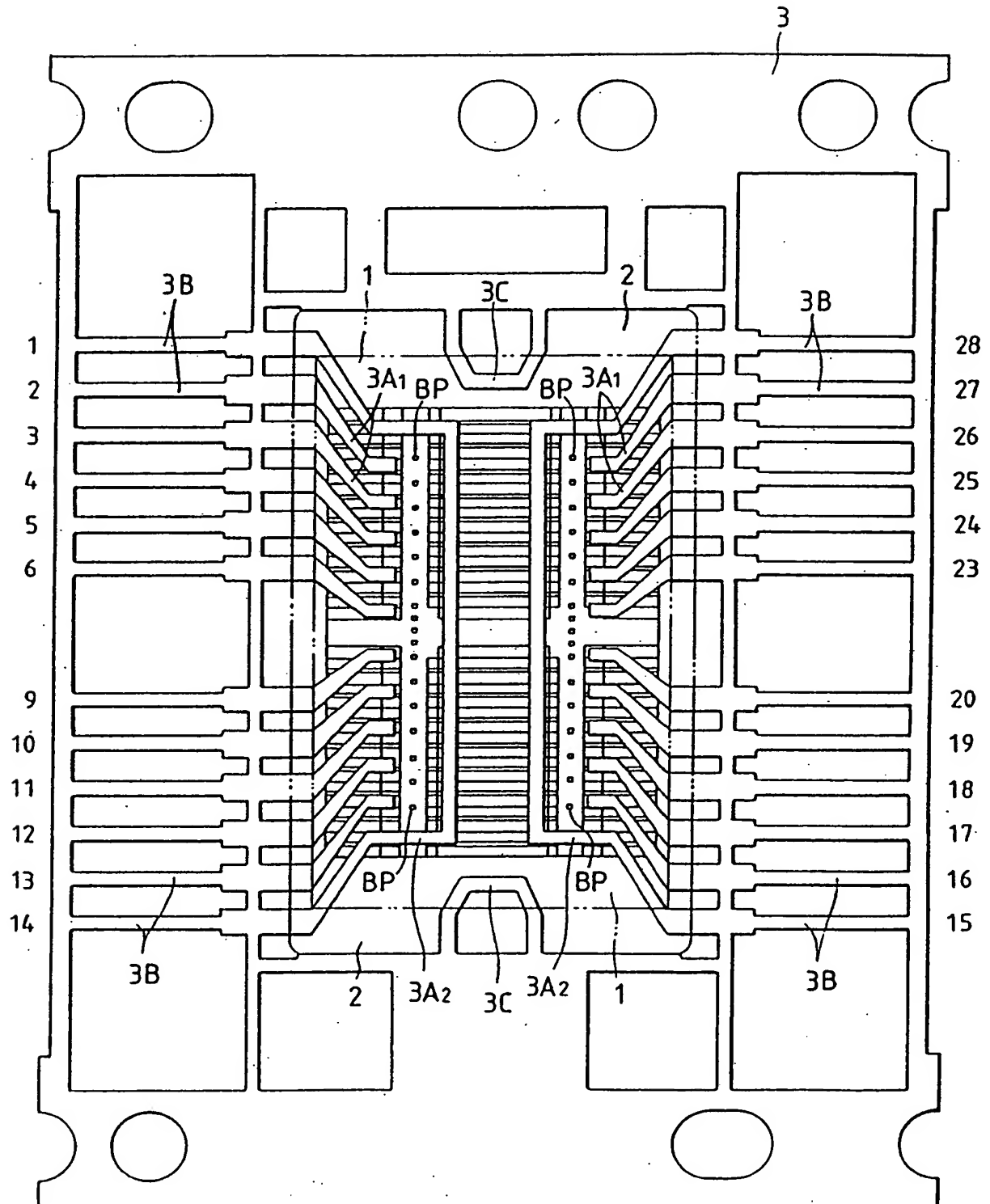


FIG. 53

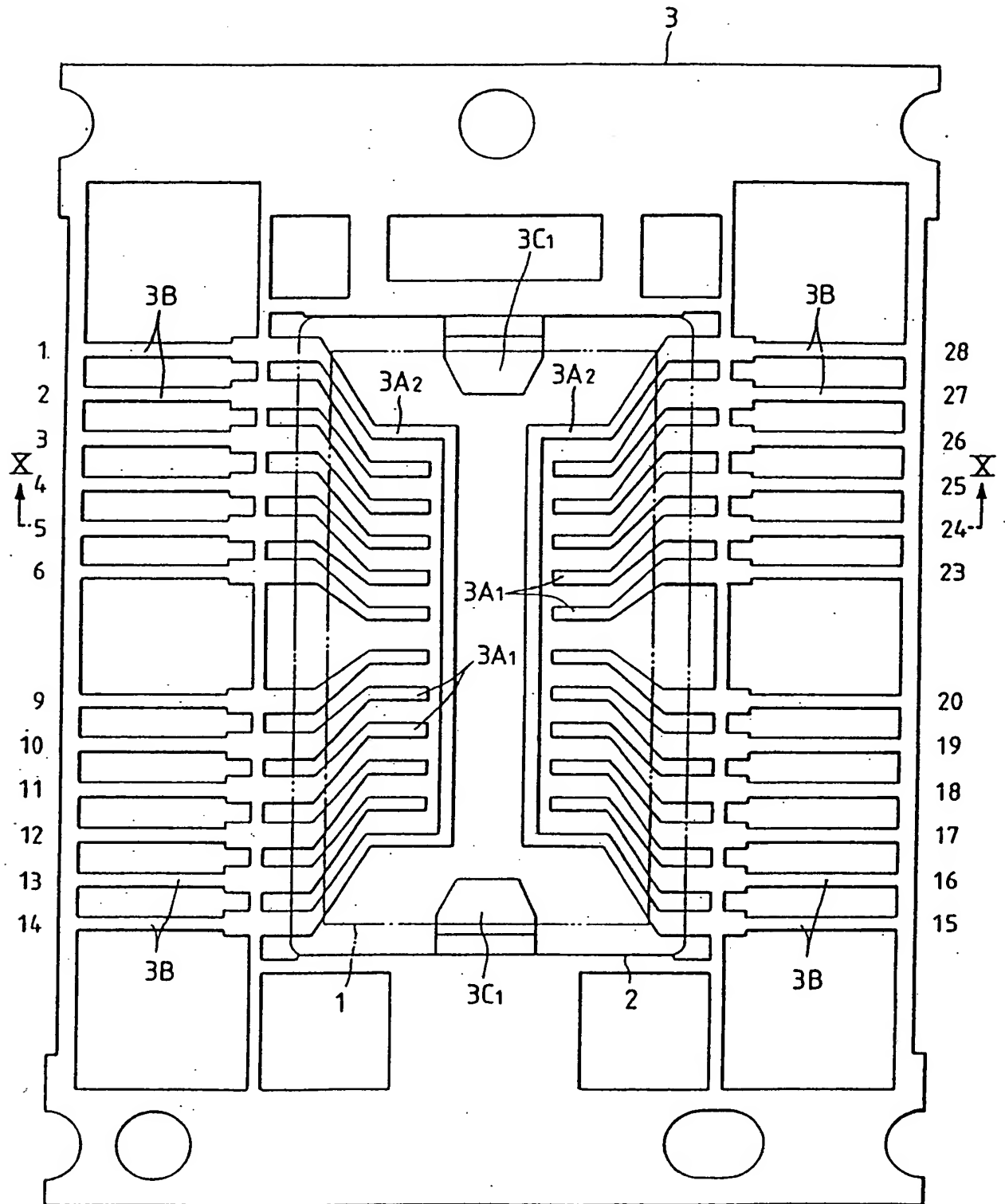


FIG. 54A

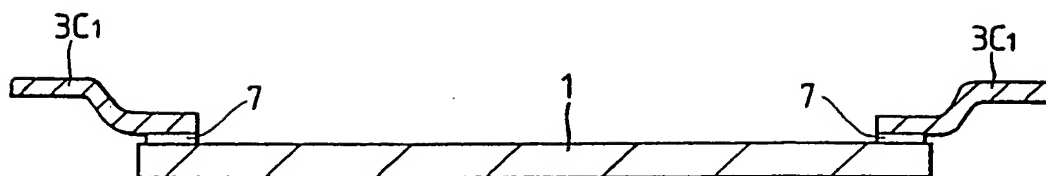


FIG. 54B

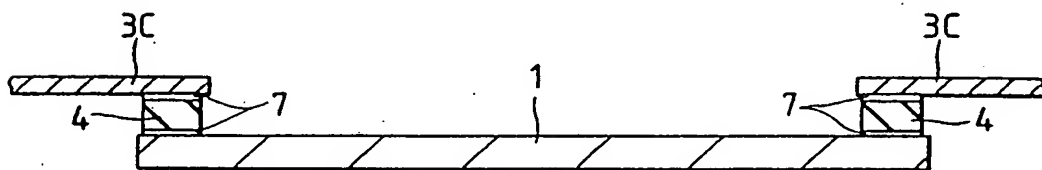


FIG. 54C

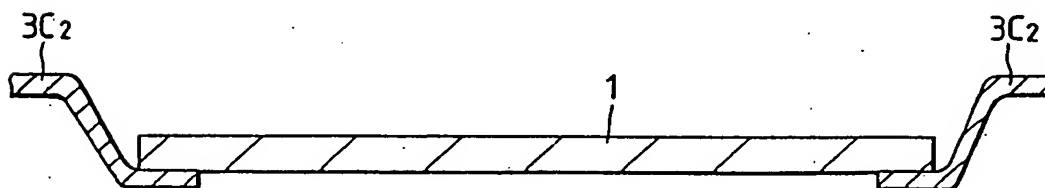


FIG. 55

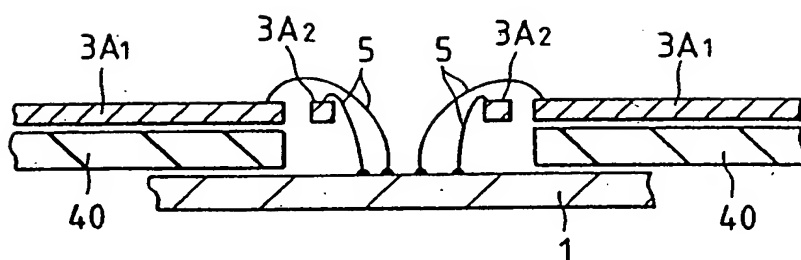


FIG. 56

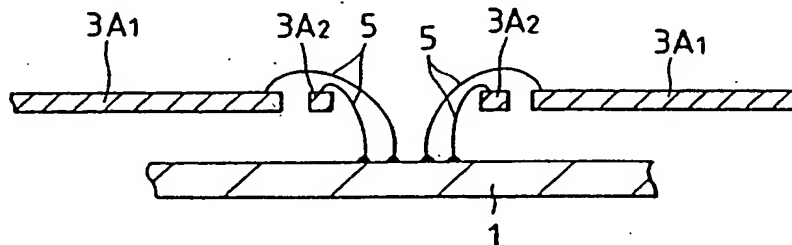


FIG. 57

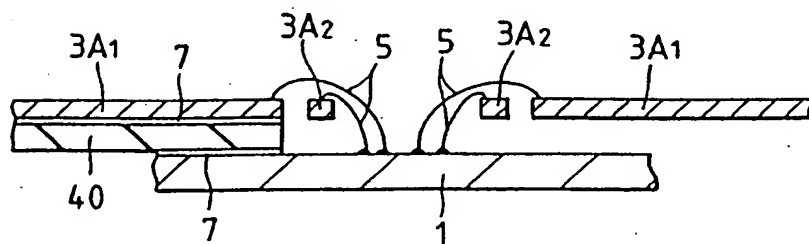


FIG. 58(A)

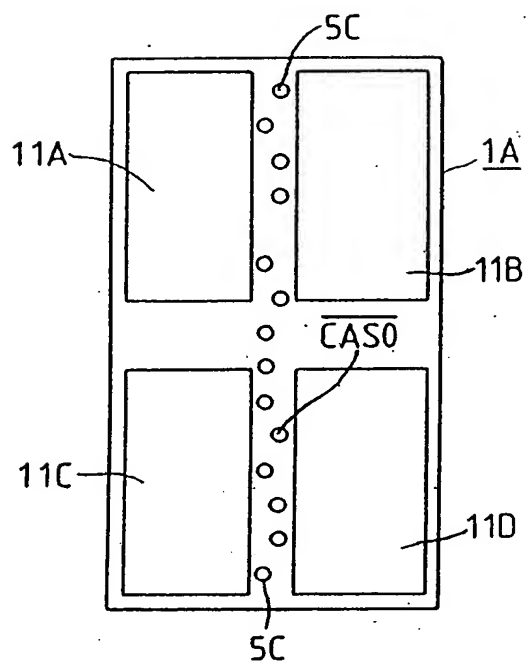


FIG. 58(B)

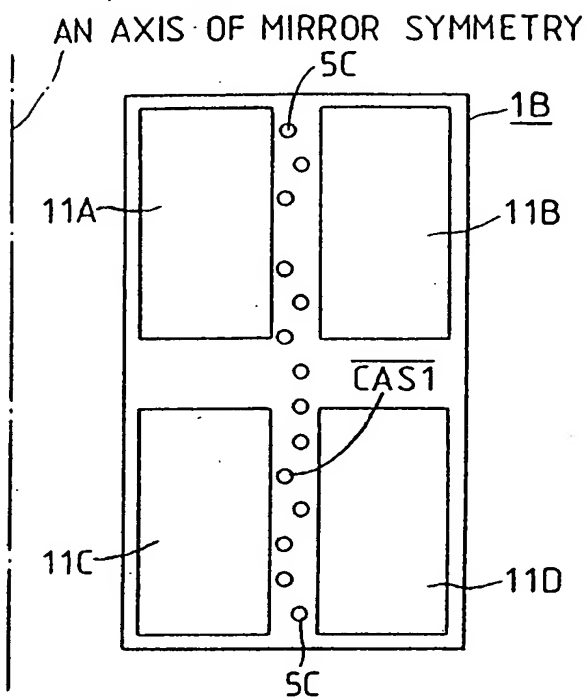


FIG. 59(A)

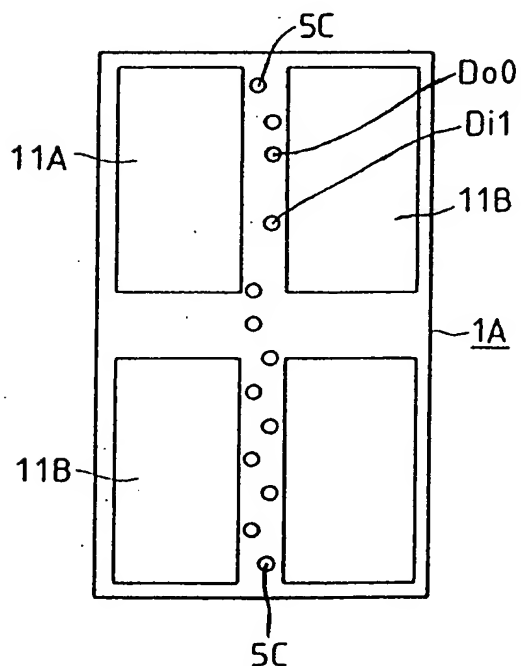


FIG. 59(B)

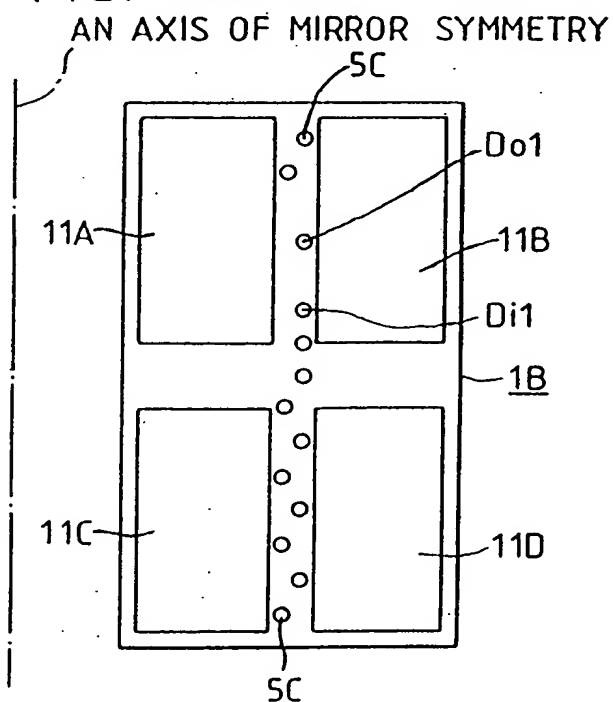


FIG. 60

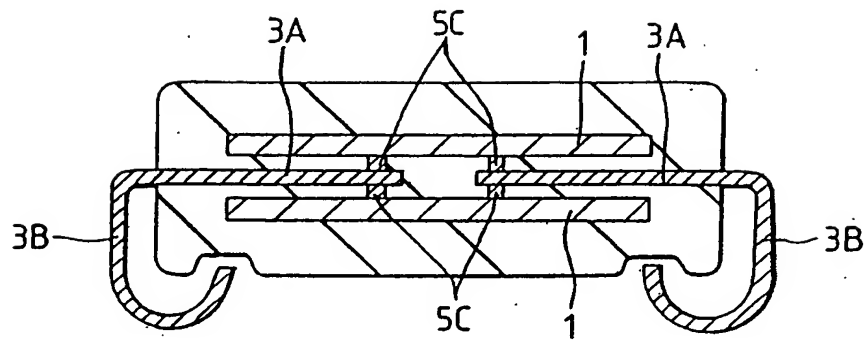


FIG. 61

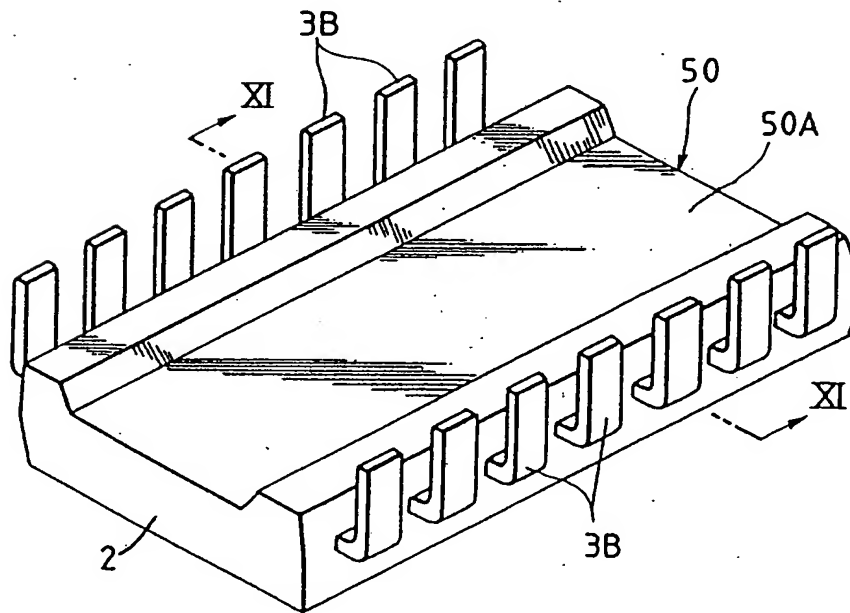


FIG. 62

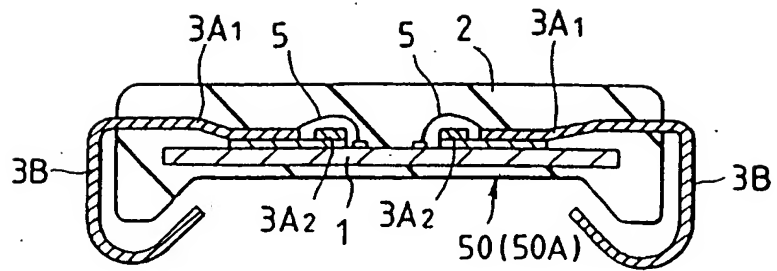


FIG. 63

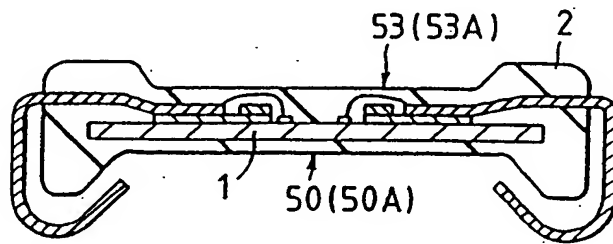


FIG. 64

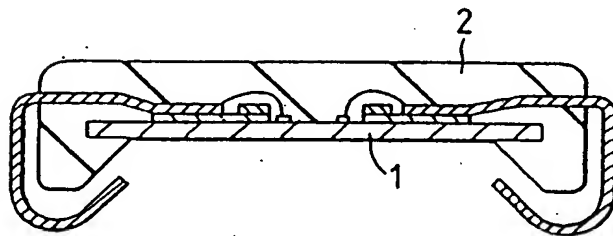


FIG. 65

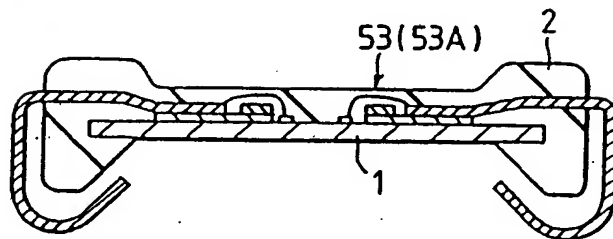


FIG. 66

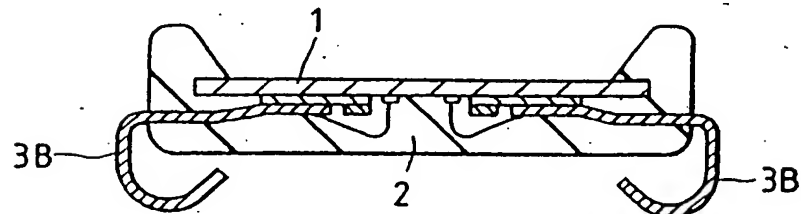


FIG. 67

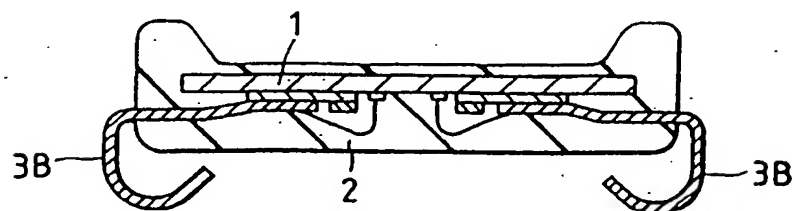


FIG. 68

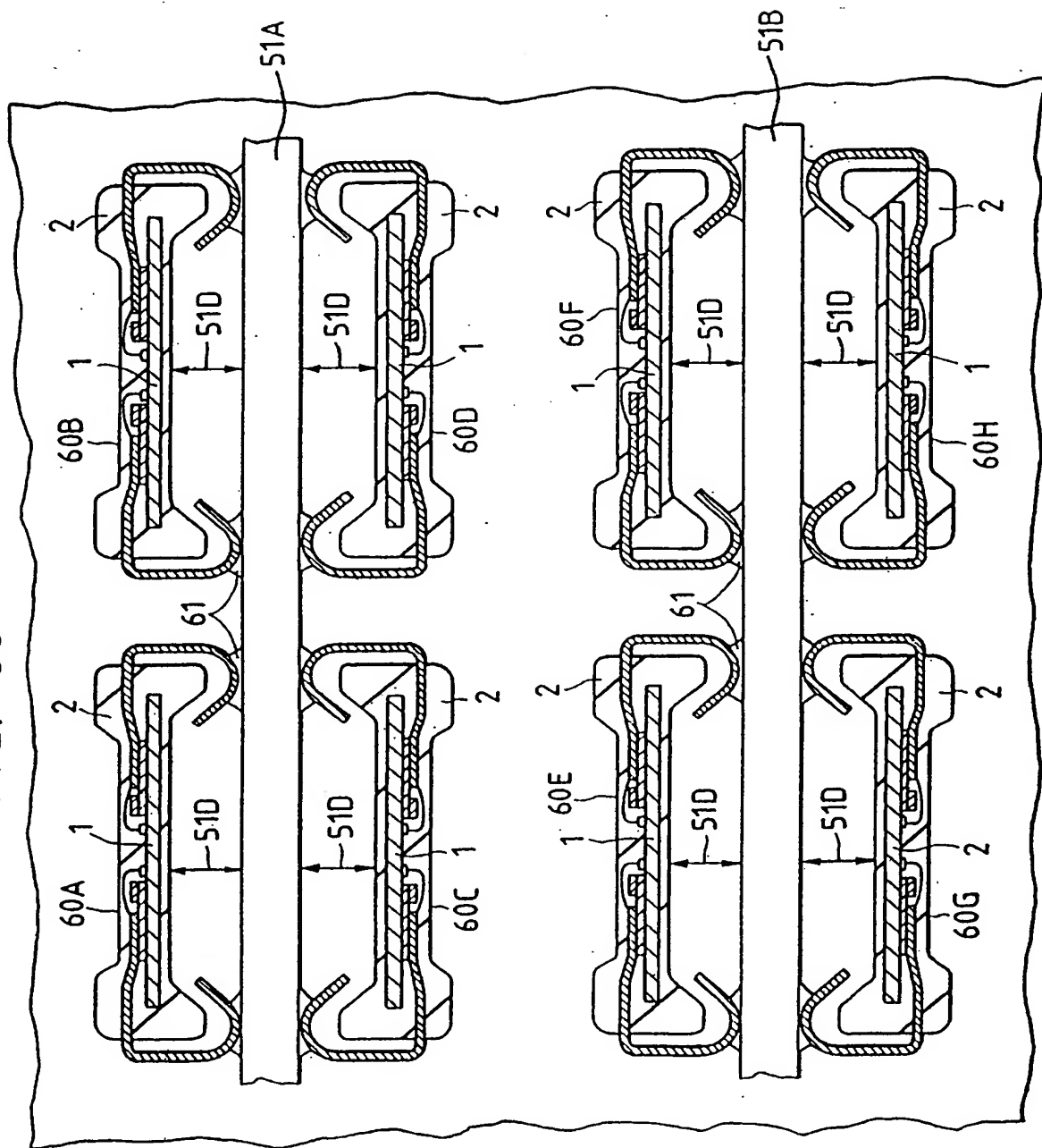


FIG. 69

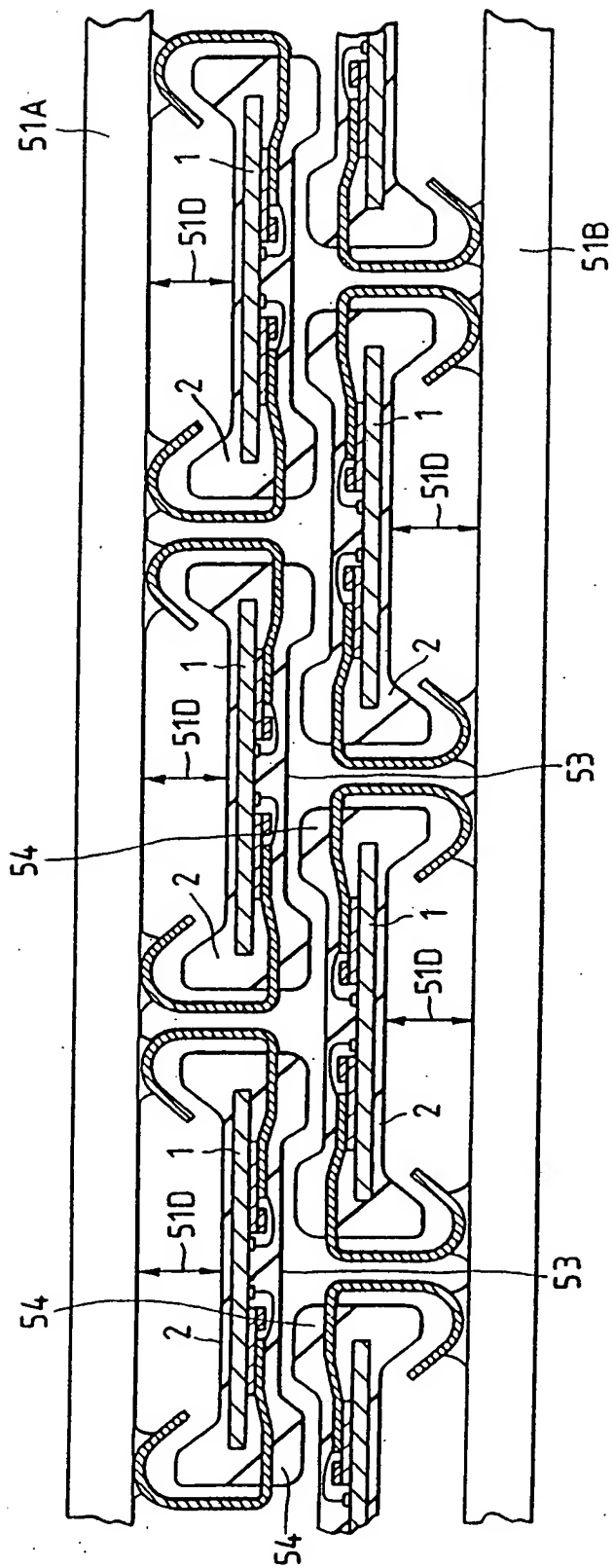


FIG. 70

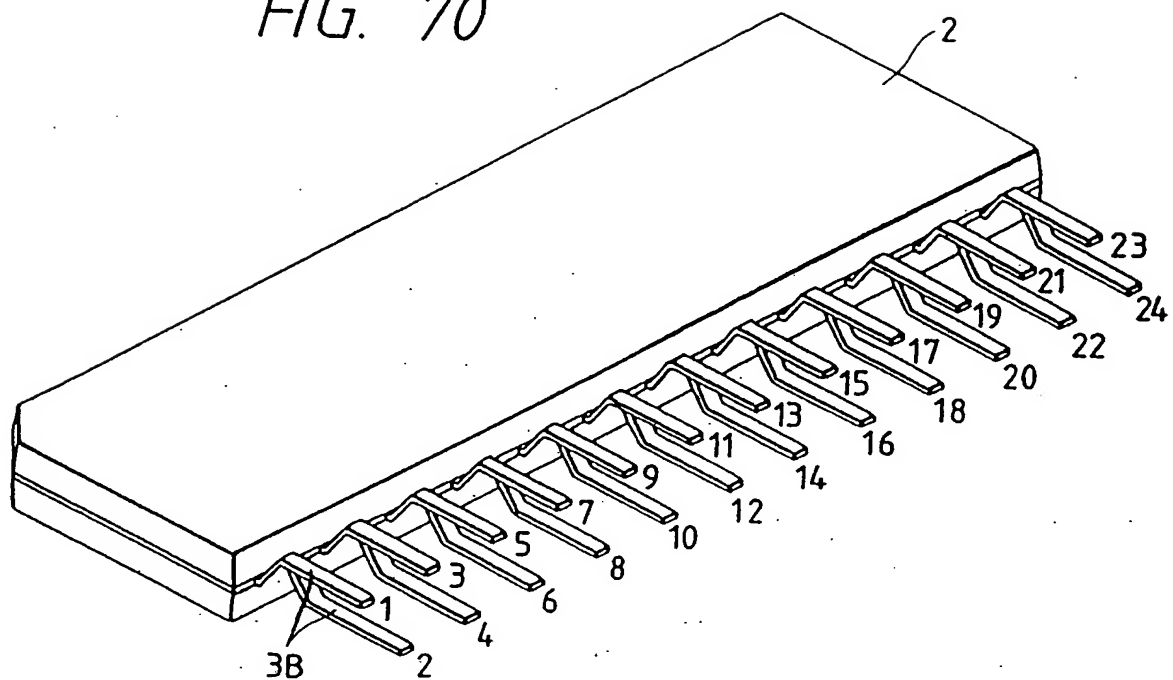
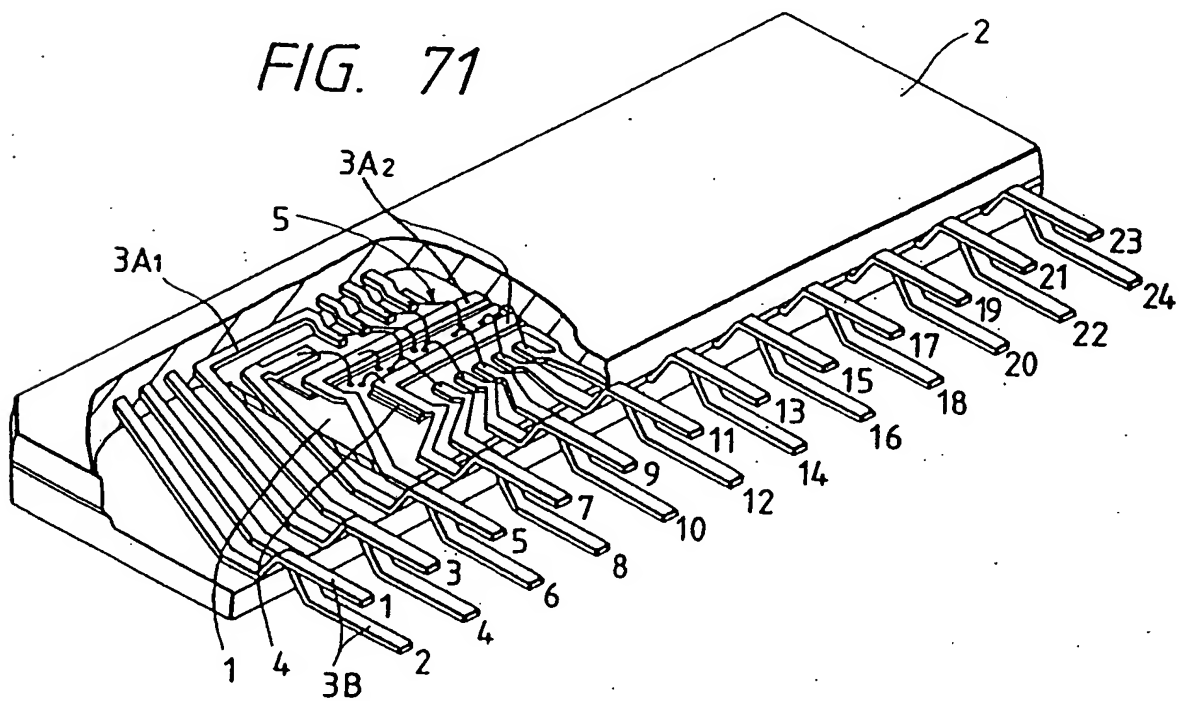


FIG. 71



11

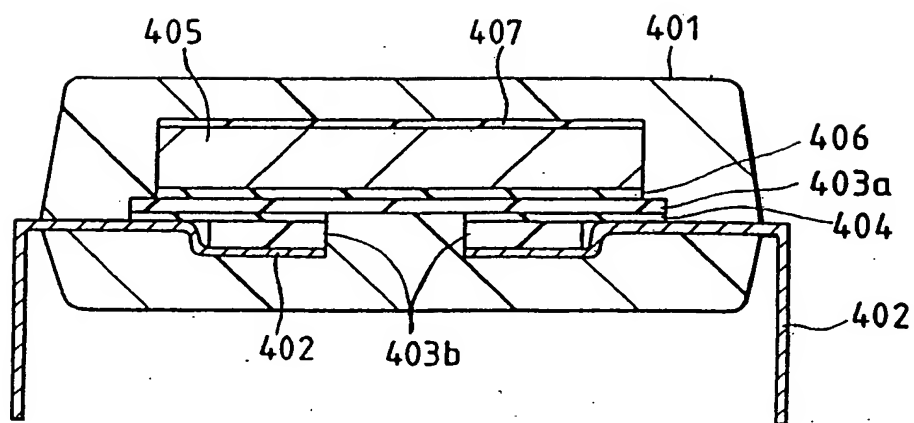


FIG. 73

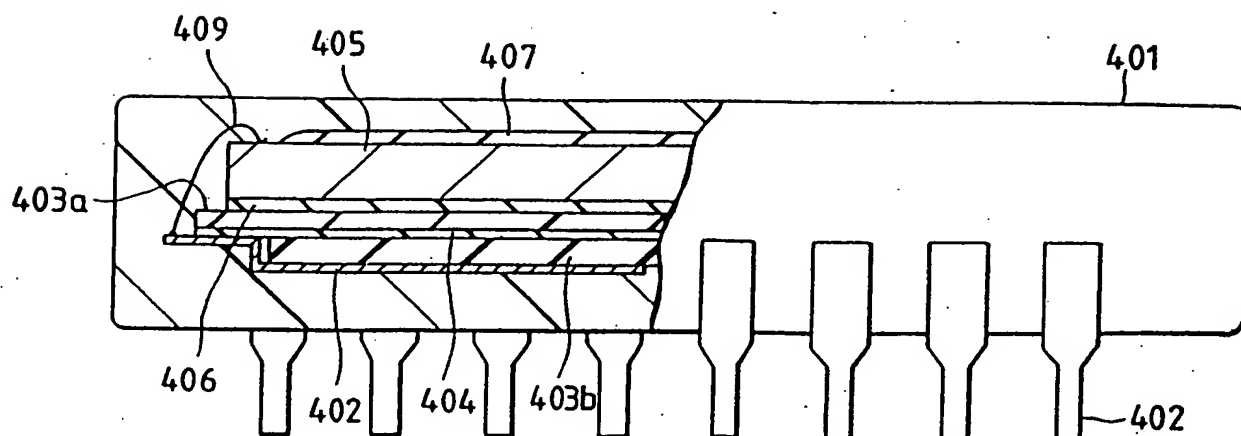


FIG. 74

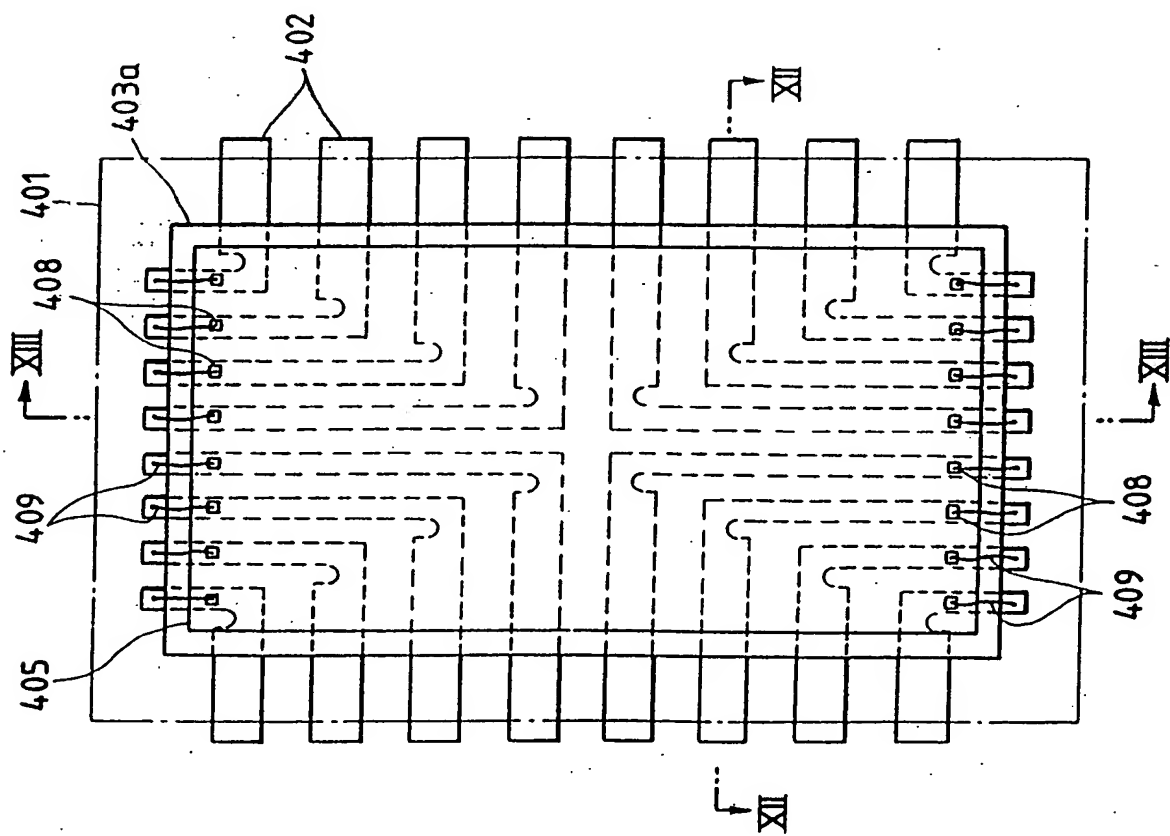


FIG. 75

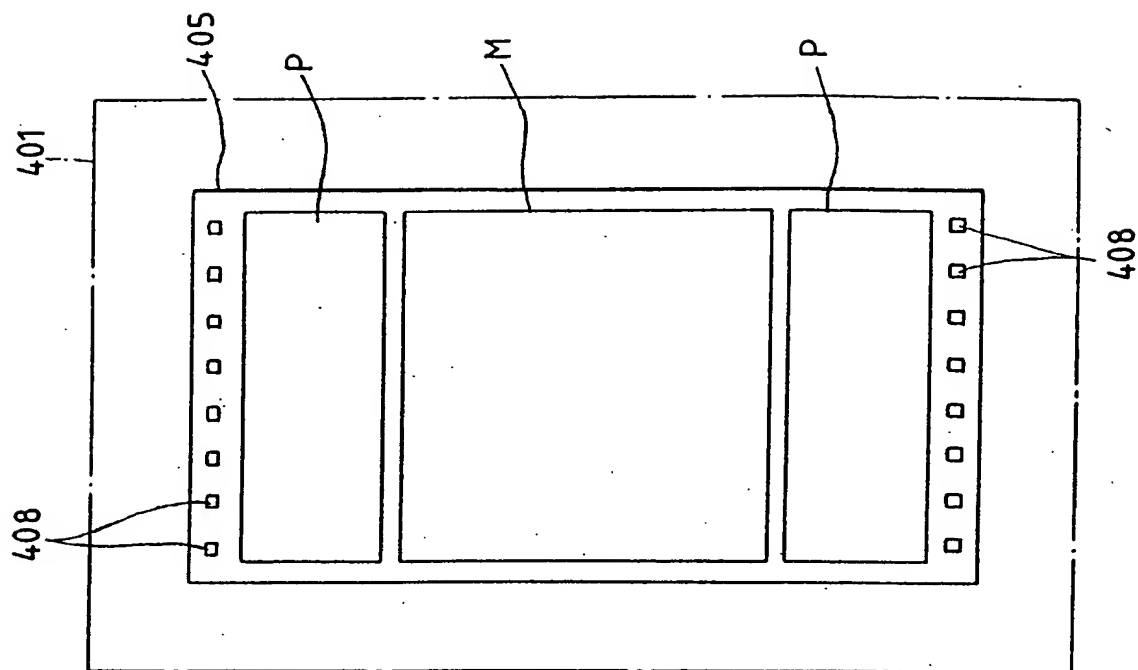


FIG. 76

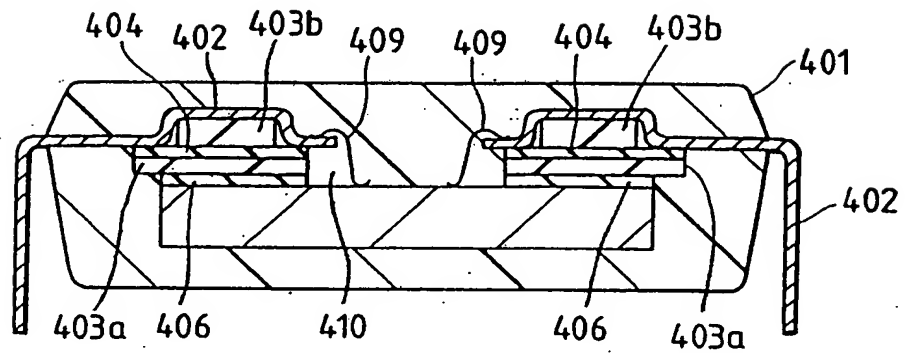


FIG. 79

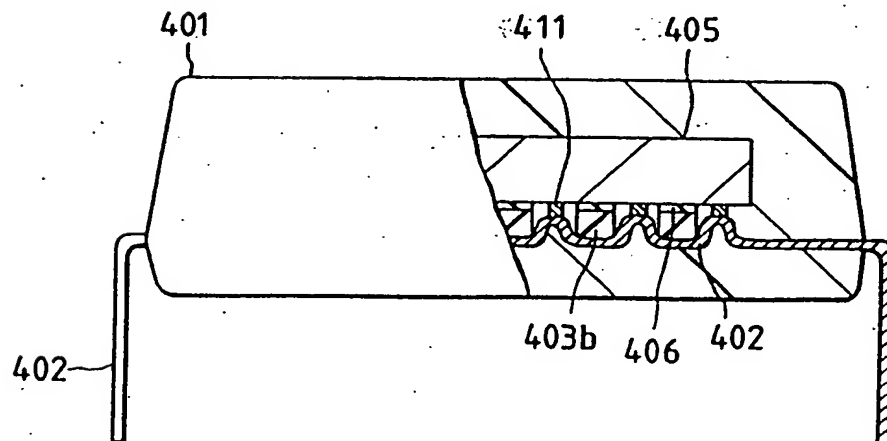


FIG. 77

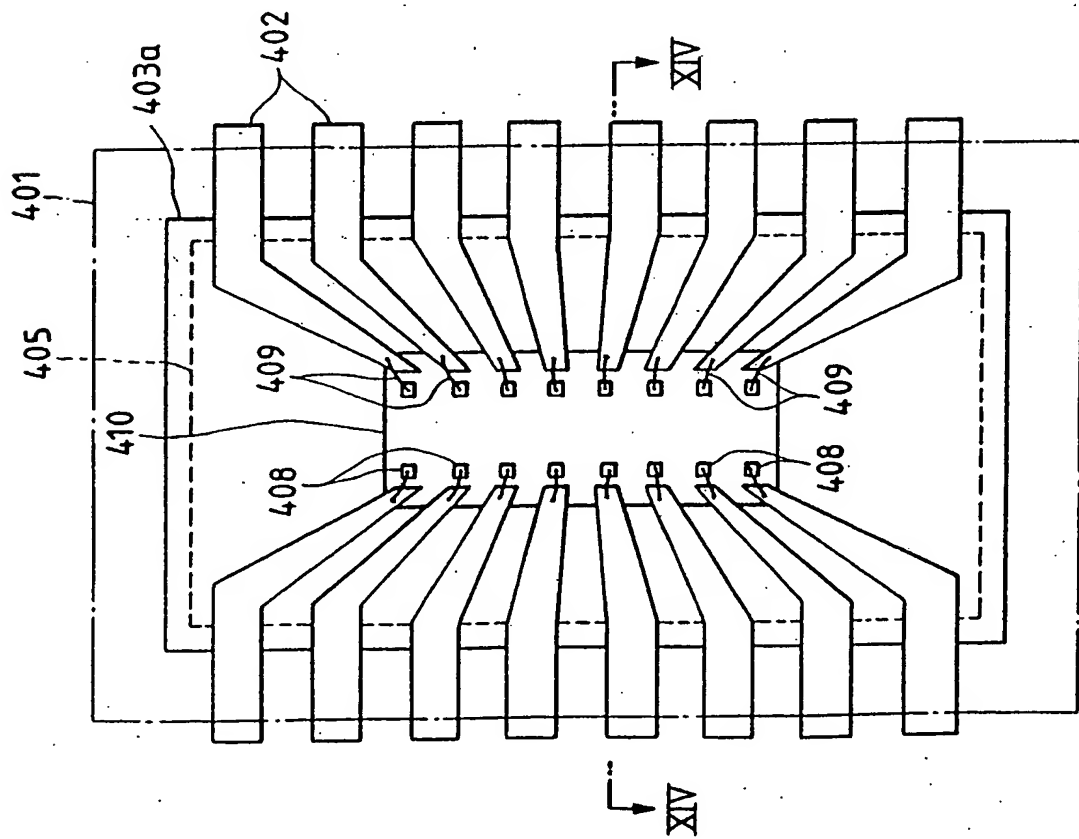


FIG. 78

